

# THE IRON AGE

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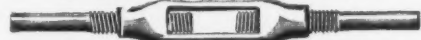
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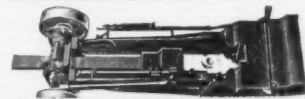
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# THE IRON AGE

New York, Thursday, November 28, 1907.

## A New Chandler 36-in. Planer.

Appreciating the need of such a machine, the Chandler Planer Company, Ayer, Mass., has brought out a medium weight planer which is of a new and special type. The planer shown in the illustrations is a 36 x 36 in. x 8 ft. machine of this new type. It is also built in the 30-in. size, and the company plans ultimately to make its 24-in. planer of this design exclusively. The third or accelerating belt continues a feature of the planer, giving a quick return speed of 165 ft. a minute on the 36-in. size and 200 ft. on the 24-in. size, and the variable speed mechanism is also retained, providing a practically unlimited range of feeds and including a new device for changing the feed from one end of the stroke to the other.

An interesting innovation is the substitution of cylin-

slow return belt, the quick return being out of action. In the new machine the quick return pulley is not on the left hand side, as formerly, but all three belts are on the right hand side of the planer.

The planer has two cutting speeds, the principle of changing the speed by means of back gears being retained. It is claimed that this is a most efficient arrangement, since it is strong and simple, and increases the ratio of belt speed on the slow cut and always maintains the ratio of cutting and return strokes on both cutting speeds. The belt ratios are high, 43 to 1 on the fast cut and 72 to 1 on the slow cut.

The unique feature of the Chandler planer is the third belt, which gives the quick return of the table. The high speed belt works in conjunction with the reversing belt. As greater power is required to start the mechanism than to keep it in motion the slower speed is used at the be-

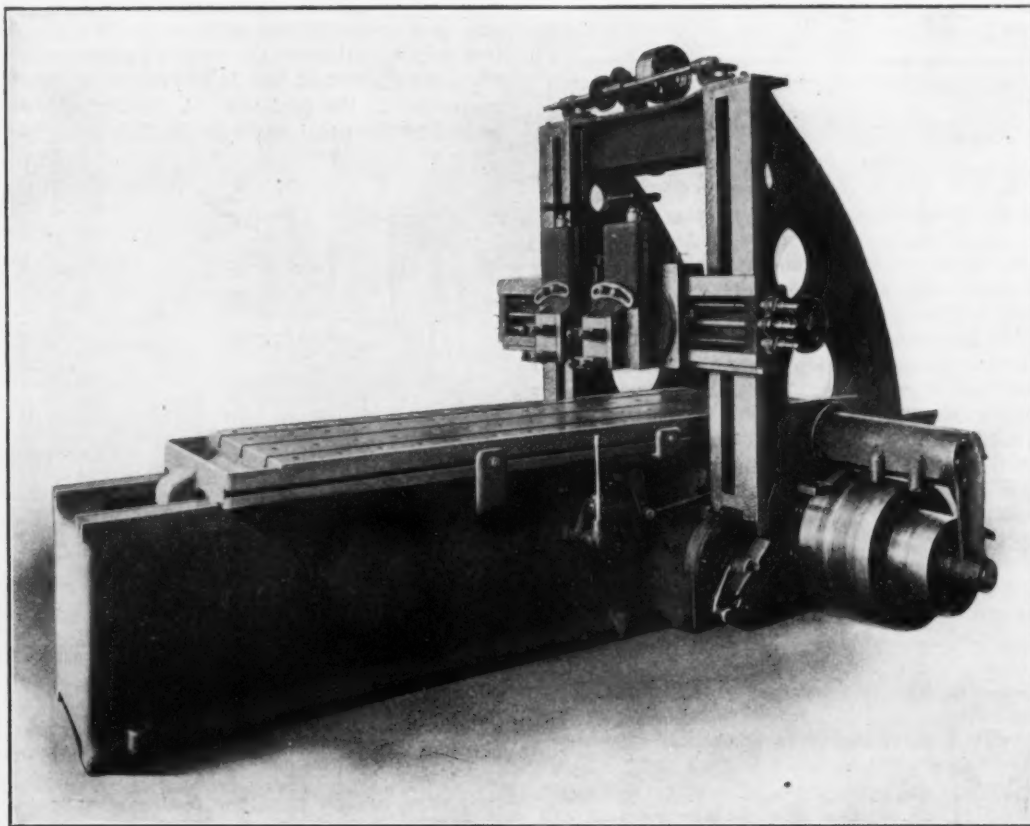


Fig. 1.—A New Special 36-In. Planer Built by the Chandler Planer Company, Ayer, Mass.

drical cams for the usual plate cams in the belt shifting mechanism, an arrangement that has been found to be efficient as well as simple. It is stated, and especially valuable on a high speed machine. The rotary cams are independently adjustable on a shaft inclosed in a barrel that forms a part of the shaft bracket. They are covered to protect them from dust and dirt. The belt eyes are attached to the barrel, so that the whole mechanism is self-contained. The motion is transmitted from the dog rocker arm to the cam shaft through a direct and simple movement involving a gear segment, crank and connecting rod.

The mechanism for operating the quick return constitutes a radical change from that of the first machines built by the company. The original head dog, with its latch, is replaced by a solid casting, which acts to operate the tappet and by an auxiliary rocker arm the quick return. The arm is so arranged that its latch, which accomplishes the quick return, may be thrown down, permitting the planer to return with the reversing or

ginning of the stroke, and also at the end of the stroke, reducing momentum, so that there will be no shock. A glance at the pulley shaft in the general view of the machine, Fig. 1, will show the two sets of pulleys, the larger serving the purposes of the common type of planer, as well as assisting in the return, while the smaller gives the high reverse speed.

In the belt shifting mechanism the flat cam, in use for years, has been discarded and replaced by cylindrical cams with rotating movement. Inside of the cam box, which occupies the same position as before, just above the pulleys, is a shaft upon which is mounted three cams. They are deeply grooved, and have the outline of the flat cam rolled up into a cylinder, the lay-out being shown in Fig. 2. No change has been made in the type of belt eye or cam roll. The cams impart their motion to the belt eyes, and thence to the belts, by their rotating motion.

The mechanism for transmitting the motion of the dog rocker arm to the cam shaft is a simple one, as shown in Fig. 3. On the end of the cam shaft is a gear, *a*, mesh-

ing a gear segment, *b*, mounted on the shaft *c*. On the opposite end of this shaft is a crank, *d*, which is connected to the dog rocker arm or tappet *f* by the rod *e*. The motion of the tappet is therefore transmitted directly to the cam shaft.

An important change has been made in the head dogging device. The original head dog of the Chandler planer contained a latch which was lowered to put the high speed belt into action, and raised to keep it out of action. The new head dog is a solid casting, having but

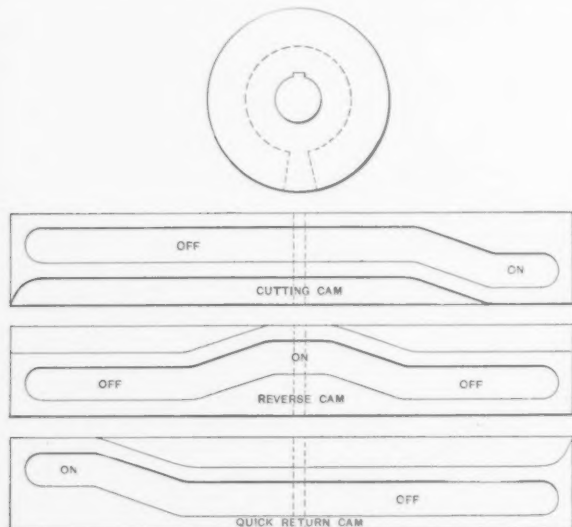


Fig. 2.—Development of the Belt Shifting Cams.

one incline, which operates the tappet. The dog also serves to operate the quick return, in conjunction with an auxiliary rocker arm on the side of the bed, shown in Fig. 1 behind the tappet. This auxiliary rocker arm carries at its upper end a latch that may be raised or lowered against a spring. In its upper position it operates the quick return; in its lower position the quick return is not in use, the table returning on the reversing belt. For the latter condition the cams are oscillated only half of their full movement. In the general view of the machine the latch is up, and the arm is in position for the cutting stroke, permitting the dog to pass over the latch without engagement.

The action of the table dog in striking the tappet at the end of the cutting stroke is to shift the cutting belt

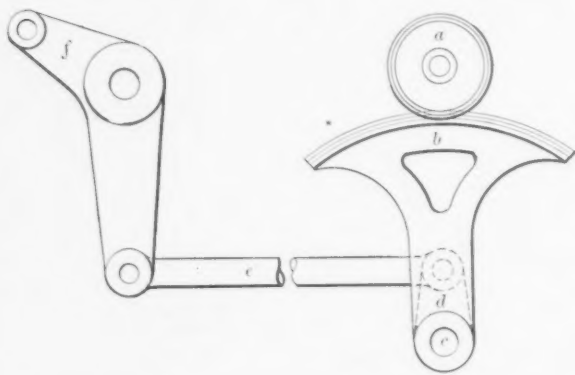


Fig. 3.—Detail of the Cam Actuating Mechanism.

to its loose pulley and the reversing belt to the driving pulley, and at the same time to bring the auxiliary rocker arm to its vertical position. As the platen begins its return stroke the table dog strikes the latch, throwing the auxiliary arm still further to the left, which motion is transmitted to the tappet, throwing off the reversing belt and bringing the quick return into action. The movement also brings the cam roll of the tappet to its highest position, almost in contact with the bottom edge of the platen. As the extreme point of the quick return is approached the cam roll engages a spear, which forms

a part of the table tail dog, and is located at the under edge of the table. The roll rides upon the spear, which has two faces, the first to engage the cam roll, throwing out the quick return and throwing on the slow return or reversing belt; the second face throwing out the slow return and throwing on the cutting belt. It will be seen that were the latch thrown down into its low position the auxiliary rocker arm would not be engaged and the reversing belt would operate the entire distance of the return.

The two planer speeds, for cutting, reverse and quick return, are obtained by means of friction gears mounted on the friction shaft, which is located between the pulley shaft and the bull gear pinion shaft. On the pulley shaft are two pinions, which mesh the two friction gears *m* and *n*, Fig. 4, on the friction shaft. The clutch is a powerful one, operated by a lever on the side of the bed (not shown in the illustration). The gears are bronze and run free on the spiders *n* and *n*, which are keyed to the shaft. The relations between the gears and spiders are such that it is impossible to engage both frictions at one time.

By means of a variable feed mechanism, in which either a friction or positive feed is embodied, a practically unlimited number of feeds may be instantly obtained within prescribed limits. The eight predetermined positions of the controller arm for locking the movable stop provide a different series of feeds for each position. One stop is stationary, the other is on the controller lever. Thus the amount of feed is determined by controlling the movement of the feed box. A further adjustment may be had by the usual screw in the link box. The machine

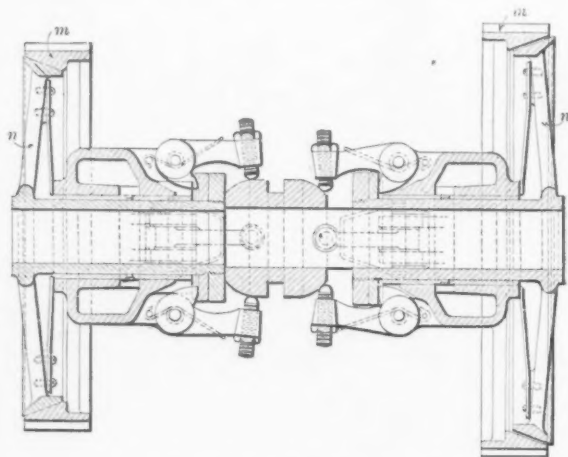


Fig. 4.—Section of the Friction Gears for Changing the Cutting Speed.

shown is not equipped with the side head feed, but this can be easily added and connected to the planer feeding mechanism by installing a second link block, connecting rod, segment and rack, the feed mechanism serving for both feeds.

The method of changing the feed from one end of the stroke of the platen to the other is a radical departure from the common practice of accomplishing the same result by shifting the link block of the feeding mechanism from one side of the center to the other, thus reversing the motion of the feed rack in its relation to the feed gear of the cross rail. The essential feature of the new mechanism is a pull gear, *l*, Fig. 5, intermediate between the feed screw and rod gears and the feed gear. To change the feed from one end of the stroke to the other the pull gear from the central stud to the one above or below it, or *vice versa*. The link block is never touched, except as an auxiliary adjustment of feed.

The device is a simple one, as will be noted in Figs. 1 and 5. The lead screws and rod are mounted on the rail, in radial relation with the feed gear *g*, through which the reciprocating feed motion is transmitted from the feed rack to the lead screws. The rack raises and falls with the movement of the platen, always moving in one direction at the end of the cutting stroke and in the opposite direction at the beginning of the cutting stroke. On each of the two lead screws is a gear, *h*, and between

them and meshing with them is the gear *j* on the rod. Between each of these three gears and the gear *j* is a stud, *k*, on which fits the pull gear *l*, to make the required connection.

As in all planers each lead screw gear is equipped with ratchet and double pawl. To reverse the direction of the feed across the table the pawl is thrown over so that it engages to turn the feed screw in the opposite direction. The feed screw gear takes the reciprocating motion of the feed rack. In one direction the ratchet is engaged by the pawl; in the other the pawl slips on the ratchet, according to which direction of feed is desired. The purpose of the movable gear *l* is to reverse the motion by altering the number of gears in train, which determines whether the pawl engages on the upward or downward movement of the rack; in other words, at which end of the stroke the planer feeds.

In construction the planer is a very strong one. All boxes are bored, and are long and heavy, extending into the bed of the machine as far as the interior gears and pinions. All boxes, except those of the bull gear, are bored to a close fit through the housings, as well as

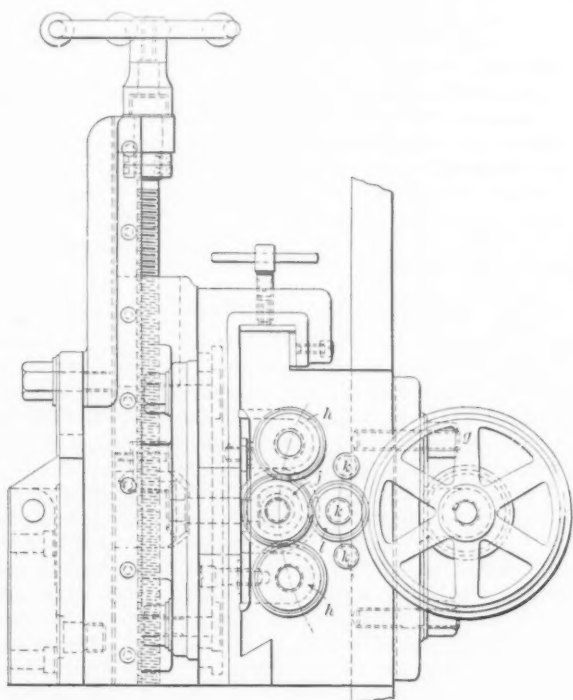


Fig. 5.—Detail of the Feed Drive, Showing Means for Effecting the Feed at Either End of the Stroke.

through the bed, giving extra support and resultant rigidity. All shafts are heavy and are ground to accurate size. Where high speeds demand it the shafts are case hardened before grinding, by a process which the Chandler Planer Company has developed. The gears are cast steel and have extra wide faces. The pitch of the gears are much finer than is usual on a planer of the same size, on the theory that the danger is not that the teeth will break from strain, but that the metal on the face of the gears will flow and distort them. A further advantage claimed for a fine pitch gear is that the teeth follow more rapidly in the meshing and that the motion transmitted is consequently more uniform. The gears are epicycloidal instead of involute, which requires more accurate setting, but gives a more continuous movement. It is claimed.

The heads are fitted with compound swivel motion, and the cross rail heads are arranged right and left. The feed can be operated by hand at either end of the cross rail. The down feed has micrometer attachment, and the compound is graduated to degrees. All loose pulleys on the planer and countershaft are self-oiling, and the V's are fitted with oil pockets for rollers for distributing oil. The outhanger bearings have bronze bushings and chain oilers.

The cutting speeds are 50 and 30 ft. a minute at 590 rev. per min. of the countershaft. The slow return speed is 2 to 1 to each cutting speed, and the fast return 3.3 to 1 to each cutting speed. The width of the face of the bull gear and rack is 6 in. and of the intermediate gears 3½ in. The width of face of housings on the bed is 38 in. The width of V's is 4 in., of platen 32½ in. and between V centers 21 in. The thickness of the cross rail where it bears on the housings is 4½ in. The width of the belts is 3 in. The weight of the machine is about 18,000 lb. for an 8-ft. planing length.

### Selling Malleable Castings as "Steel."

In the *School of Mines Quarterly* for November, Prof. Bradley Stoughton of Columbia University contributes an article on "Malleable Cast Iron." Of the occasional attempts to market malleable castings as "steel," the writer says:

In the form of small castings malleable cast iron and similar products often appear under the name of steel, because under that name the producer finds a readier market for them. On account of their fluidity they may be cast very cheaply in small sizes, and therefore the temptation to use them as a material for "cast steel hammers,"\* "hard steel" bevel gears, "semisteel castings," and even automobile "steel" drop forgings, is a strong one.

Engineers are warned to be on their guard against a deception of this kind, for legal redress has been sought many times in vain. A clever lawyer may easily confuse and outwit a judge or jury with the involved definitions and technical descriptions necessary to make the distinction clear. It is usual for the manufacturer when putting material of this kind upon the market to qualify the name "steel" with some other letters or name, such as "P. Q. steel," "Smith steel," &c.; but they all differ from true steel in that they were not "cast into an initially malleable mass." Some are made by melting a large proportion of steel with cast iron, after which the cooled metal may or may not be annealed in iron oxide. Others are made by a long or thorough annealing of ordinary malleable castings in iron oxide, by means of which the metal is decarburized to some depth, and is then carburized again by a cementation process. This makes a very good material for some purposes, such as small bevel gears not requiring strength or much ductility, but it ought not to be called "steel." Indeed, there are some purposes for which malleable iron castings are even better than steel castings.

If the purpose for which it is to be used does not require any other properties than malleable cast iron possesses, then it should be used under its true name; but if it is to be used under circumstances where it is liable to strain, calling it "steel" will not enable it to stand up under the work any better. The confusion is the more easy because genuine steel is made by the cementation of wrought iron, and wrought iron goes in England under the name of malleable iron. In America we seldom call wrought iron "malleable iron," but we often abbreviate malleable cast iron to "malleable iron," or even to "malleable."

A pamphlet entitled "How Connellsville Coke Is Made" has been published by J. H. Hillman & Son, Frick Building, Pittsburgh, Pa. The story is told pictorially, 21 half-tone views representing the various operations from the opening of a drift mine to the loading of foundry and furnace coke on the cars. The views are supplemented by three pages of descriptive matter, dealing with 48-hr. blast furnace coke, 72-hr. low sulphur foundry coke, and crushed coke for domestic and manufacturing purposes. Mention is made also of the Hillman coke adapted for copper smelting, analyzing 88 per cent. in fixed carbon, 10.5 per cent. ash and 1.5 per cent. volatile.

\* The trade would ordinarily understand by this name hammers made of crucible steel, so the use of this name is really a fraud.



## Rust Prevention.—II.\*

### A Treatise on the Preservation of Iron and Steel by Paint.

BY L. M. STERN, CLEVELAND, OHIO.

#### Diagnosing Conditions of Exposure.

This is an important matter in the selection of the most suitable paint for a purpose.

The accompanying illustration shows a smokestack below the roof in a sheet mill. The paint used on it was made by one of the most reputable manufacturers in the country, and was compounded of high-grade raw materials. The manufacturer guaranteed it to last one year on this stack, which did not get over 700 degrees F. The condition of the paint, as shown in the illustration, became so one week after it was applied and thoroughly dry. Paint taken from the same mix in the barrel was applied on a tin roof in the neighborhood the same day, and five years afterward was in perfect condition, thus illustrating the proper use for that particular kind of



A Smokestack One Week After Being Painted.

paint. On the other hand, a cheaper and differently made paint was applied to this stack a few days later, after the scales were cleaned off, and it stood the exposure fairly well for one year, and on a tin roof in the neighborhood it did not preserve the metal over four months.

Samples, which are occasionally painted on small pieces of tin and sent out by the manufacturers to bend and twist, appear all right until they have been exposed to the weather for a year or so, at which time their beautiful appearance and preserving qualities have quite vanished.

In order to select a protective coating to the best possible advantage, the conditions of exposure should be thoroughly understood first; other conditions, such as the character of the surface and number of coats to apply, should follow.

The exposure of dry paint surfaces may be conveniently divided into eight classes as follows:

1. Ordinary interior exposures.
2. Ordinary exterior exposures.
3. Extraordinary interior exposures.

4. Extraordinary exterior exposures.
5. Extraordinary exposure to heat (other than atmospheric).
6. Extraordinary exposure to cold (other than atmospheric).
7. Extraordinary exposure to liquids (other than atmospheric).
8. Extraordinary exposure to abrasion (other than atmospheric).

#### Ordinary Interior Exposures

rarely cover a variation of temperature of more than 60 degrees F. Consequently the expansion and contraction of the surface met with in this class of exposure are so small that they have very little effect upon an ordinary paint properly put on and of good materials. Neither do moisture and its rapid evaporation prevail, so that here we have a condition notable for its simplicity. Take, for instance, several small sheets of tin or iron with clean, bright, dry surface, coat them with coal tar varnish, asphaltum varnish, or, in fact, any cheap paint, and when thoroughly dry lay them aside in the drawer of a writing desk; 20 years later they will be in as good condition as the day they were stored away. The sheets of metal, even without paint, laid away, in like manner for the same length of time, will also be found to be in excellent condition.

Structural iron work imbedded in cement or concrete or otherwise incased should have one coat of paint applied at the shop and two coats afterward, for the reason that subsequent coats cannot be applied after the building is completed, and once painted it is expected to remain so as long as the building lasts. Cement and concrete, moreover, are more or less porous and draw dampness to the metal.

#### Ordinary Exterior Exposures

meet with climatic conditions varying over 125 degrees F., ranging from the chilly blasts of cold weather to the scorching rays of the sun. Here expansion and contraction hold full sway, tugging and straining at the adhesive and elastic properties of the paint while adhering to a surface not susceptible to paint absorption.

Hail, snow and ice, thawing and freezing, rain and its evaporation attack vigorously the organic properties of the vehicle in a paint. When a varnish is used to withstand this class of exposure the heat from the sun continues to liberate what volatile matter it contains until it becomes baked so hard and brittle that its adhesiveness subsequently becomes a matter of only "here and there." If the varnish is a thick coating it is sure to become alligatored when the metal expands and contracts while in the hard condition, and if it is a thin coating it will become reduced to powder and wash off. This sort of exposure requires a paint of superior, elastic, adhesive, oxygen and water resisting properties, and as the top coat is the one subject the most of all to these conditions it should of necessity be made of carefully treated linseed oil, graphite and a suitable soluble solid composition to protect the oil so as to add permanence to the vehicle as explained.

The classes of steel work generally coming under this class of exposure are bridges, ornamental ironwork, fences, fire escapes, gutters, valleys, spouting, roofing, siding, towers, sheathing and shutters, &c. New materials of this class should receive at least one coat of paint at the works and one coat after it is put up.

#### Extraordinary Interior Exposures

such as will be met in damp cellars, livery stable roofs (exposed on the under side to ammonia fumes), cast house roofs at furnaces and foundries subjected to steam and heat, under side of roofs of steel mills directly over sulphuric acid, pickling vats, pulp mills, paper mills and ships' holds which sweat continuously, &c., have considerable effect upon the paint on the surface, and paint thus exposed should dry harder and have more soluble solid in its composition than class No. 2. Two good coats of the most suitable paint for this class of work are in most cases most satisfactory, and when the top coat loses its efficiency it should be replaced with another one before access to the metal is gained, as this will save con-

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siderable labor in removing rust which would otherwise form.

#### Extraordinary Exterior Exposures

are those exposures where the atmosphere is surcharged with acid fumes, which generally emanate from open coke ovens, chimneys, locomotive stacks, chemical works, &c. The effects of this class of exposure vary extensively, a great deal depending on the distance to the source of the fumes and their character. Painted metal work of all kinds, especially roofs and bridges, in the vicinity of these quickly loses its protective coating if the paint is not made of the proper materials to withstand the exposure. Like class No. 2, this exposure necessitates the use of a protective coating capable of withstanding considerable expansion and contraction, and should not harden so much as the paint needed for class No. 3. It must, furthermore, have a vehicle protected by a soluble solid composition properly prepared to stand the surcharged atmosphere; and an inert pigment, such as graphite, white lead and red lead especially, is to be avoided in this class. If this form of exposure is very severe three coats of paint should be used on the metal work.

#### Extraordinary Exposure to Heat

takes in those conditions where heat is produced by artificial means greater than atmospheric heat, and it comes into direct contact with the painted surface. This heat may come in contact with paint exposed to outside atmospheres, or it may come in contact with paint exposed to inside atmospheres. The class of materials subject to the former consists of smokestacks, blast furnace stoves and locomotive front ends, &c., and the class subject to the latter consists of boiler fronts, furnace fronts and hot air and steam pipes. In all such cases the maximum amount of temperature should be ascertained, and if found to be more than the boiling point of water (212 degrees F.) a compound vehicle will be necessary. As explained, ordinary pigments, such as graphite, Venetian red, yellow ochre, or umber, are practically fireproof. Should the heat run over 600 degrees F. little or no linseed oil should be used, and a soluble solid composition of a melting point a few degrees higher than the hot surface must necessarily be expected to be used for any permanence in this respect.

In 1902 officials of the American Sheet Steel Company called upon the author to make several tests personally on the hot smokestacks over their pair furnaces and slab mills, stating that the paint when selected and bought would have to be applied to the stacks while hot, for the reason that the furnaces were always going and the fires could not be put out without too much expense and inconvenience. Twenty-two different kinds of paints were tested in this manner, no two showing similar results. The author, rather than allow any one else to prepare the surface for the test and not do it thoroughly, did so himself, so that the experience thus gained would be of subsequent value. Flames were bursting from the tops of some of the stacks, and the roofs were so hot that the soles of the shoes were scorched, and those making the test were compelled to keep moving.

Red heat of steel or iron is over 900 degrees F. and the author knows of no vehicle that will stand this heat and be waterproof and rust preventing at the same time. Whitewash or calcimine, sometimes called water paints, and sodium silicate used as a vehicle, will stand much more than 900 degrees F., but paints made of these will not stand water or moisture, nor will they stick to the surface long after being thoroughly hardened.

Only one coat of paint is recommended for this class of work, for the reason that extremely hot surfaces usually burn off the paint prematurely, in which case frequent applications are necessary, and two coats would be a considerable expense in so doing. It would be folly, however, to expect to keep paint in a good condition for more than a few months on a surface as hot as 900 degrees F. The nearest material approaching a protective coating to stand over 900 degrees F. would be a coating of porcelain enamel. This would take more heat than 2000 degrees F. to melt it on the surface, and for this reason it would be an expensive and impractical opera-

tion, possible only on new work while in the factory preparatory to erection.

An approximate estimate of temperatures on a metal surface may be had by applying liquids of known boiling points on the surface and noting if they boil.

#### Extraordinary Exposure to Cold

generally takes in conditions such as cold storage plants having steel construction within, the inside surface of steel plates composing ships' bottoms, the outside surface of standpipes or water cylinders of hydraulic pumps, &c. The variations of temperature on these surfaces are slight or are below the amount necessary to injure a paint for the reason that they rarely if ever reach higher than 70 degrees F. The greatest amount of injury which these conditions inflict to a paint is due to chilled vapor resulting from a damp atmosphere condensing on the surface resembling sweat. Should the conditions be such that this sweat reappears soon after it has been removed, preventing the maintenance of a dry surface long enough to apply the paint and enable it to become dry, the painting should be deferred until the proper condition can be met with and then paint that will dry and harden quickly should be used. This will necessitate the use of a paint which has very little or no oxidizing oil.

A volatile solvent varnish vehicle paint containing graphite for a pigment and a soluble solid known to the author as Nicaragua gum has been found to be the best for this class of work. This kind of paint hardens so thoroughly and so quickly that it would not stand such exposures as class No. 2 with any degree of certainty or satisfaction, and therefore should only be used for exposures of this class.

#### Extraordinary Exposure to Liquids

takes in a class where water is maintained in direct contact with the paint, such as ships' bottoms, steel intake cribs, tanks, standpipes and portions of gas storage tanks commonly called gas holders. These require a compound vehicle paint with very little oil, or a varnish paint similar to that used for class No. 6, but should be heavier bodied and contain less volatile solvent, so that a heavy coating of the basic material will remain on the surface. This is necessary to withstand the extreme aqueous pressure against the paint film.

#### Extraordinary Exposure to Abrasion

takes in a class where friction eliminates a paint from a surface before it gets a chance to demonstrate its preserving properties by virtue of exposure to atmosphere, heat, gases or water, such as coal bunkers, ships' holds, freight cars and metallic shields underneath the flooring of bridges under which locomotives pass emitting carbonaceous grit from the smokestacks.

This class of paint should be slightly harder than that used for exposure No. 2, but not hard enough to become cracked or broken by violent blows, such as that of coal being loaded into cars and striking the surface of the car. It should have graphite exclusively for a pigment. This paint, when almost dry, should be dusted with the best quality of slippery dry graphite, then allowed to dry and then polished with a woolen swab or sheep skins with the wool on (using the woolly side). The finished surface will then have a highly glazed surface that will withstand more mechanical abrasion than any other form of paint coating which the author knows of.

#### The Selection of the Most Suitable Preservative.

The selection of the most suitable material should be governed not only by the class of exposure to be met with but also by the number of coats of paint to be used and the time allowed for each to dry properly.

An enormous spreading capacity of a paint is often a misleading, fraudulent or deceptive proposition offered to purchasers of paint in order to secure their patronage. The spreading capacity of almost any paint of good body may be increased by thinning it considerably with a volatile or a drying oil, and this decreases the cost per gallon by reason of the increased bulk resulting from its extension by the use of a cheaper thinning material than the cost of the paint. Therefore claims for superiority of a paint due to its superior spreading capacity should not necessarily add anything to the value to a



statement of this sort. Furthermore, the less spreading capacity a paint has the more body it possesses. This body is generally the most costly part of a paint, and the fact that it is too heavy or thick to possess spreading qualities equal to a thinner paint should not detract from its value after taking into consideration the cost of the thinners necessary to reduce the body and increase the quantity and spreading capacity to the extent most desired.

A basis whereby deductions may be made to approximate the average thickness of a coat of paint on a smooth flat surface, which does not absorb any of the paint, may be readily calculated in the following manner:

A legal standard United States gallon contains 231 cu. in., and if 1 gal. of paint is spread over a surface containing 231 sq. ft., the wet paint will average 1-144 in. thick.

In like manner, should the paint be spread twice as far and cover 462 sq. ft. to the gallon, it would be 1-288 in., which thickness can be compared to the thickness of the leaves of a book having 288 pages to the inch. Now when the paint is dry it will either thicken or become thinner—the former if a linseed oil paint and the latter if a volatile oil varnish paint; therefore allowances should be made accordingly.

The writer believes that a protective coating averaging less than 1-144 in. thick is not sufficient protection to a metal surface exposed to any class of exposure intended for long service and that 1-72 in. is not necessary in any case where high grade material is used.

The spreading capacity of a paint should be averaged when based upon a standard condition of surface, the most suitable for the purpose being bright, clean tin sheets or glass, and estimates for other forms of surfaces based upon variations from the standard. The spreading capacity will also depend upon the temperature, and for convenience 70 degrees F. is recommended.

Careless and slovenly spreading of paint will cause a great variation and lack of uniformity of thickness of a coating; nevertheless in any case the attainment of an average estimate of thickness cannot be depended upon. When, however, a paint is advertised to cover 1000 sq. ft. to the gallon it means necessarily that the coating must average less than 1-576 in. thick, which may be compared with thin tissue paper.

#### Testing the Quality of Pigments, Etc.

Pigments may easily be tested for their fineness of texture by simply rubbing them in a dry state between the fingers or upon the palm of the hand. If the pigment is mixed in a drying oil it can be separated out and dried by thinning the paint with gasoline, vigorously shaking together the mixture, allowing the pigment to settle to the bottom, and washing out the heavy oil, then pouring off the liquid, repeating the operation until all of the drying oils have been extracted, after which the pigment may be dumped out upon a sheet of blotting paper and allowed to dry.

It will be noticed that the best grades of graphite "rub up" into a higher gloss between the fingers than any other known paint pigment and that when this pigment does not "rub up" into a slippery finish it is adulterated.

Vehicles may be tested in a simple way for commercial purposes by allowing the pigment to settle to the bottom, pouring the vehicle upon a piece of glass, allowing it to dry for 48 hr. and then subjecting it to a temperature of say 200 degrees F. (up near a hot stove) for several hours, after which cool off by soaking it in cold water for 30 min., wipe dry with a cloth vigorously and see whether any of it will rub off, after which take the blade of a pocket knife and cut into it with a long, steady cut beneath the paint and along the surface of the glass. If the vehicle can be then cut, leaving long tough and elastic strips, it can reasonably be expected to possess good qualifications for ordinary exposures met with. However, for exposures such as Nos. 3, 4, 5, 6, 7 and 8, vehicles should in addition be given actual time tests to the exact exposures to be met with, keeping detailed accounts of the conditions and the kind, quality and amount of raw materials used, so that the paints

thus prepared for use may be intelligently compared for future selection.

Driers should be given the same test as the vehicle, noting, however, the strength of the drying properties, by the amount necessary for use with the vehicle and the time consumed in the drying of the oils thus tested.

A paint oil or varnish is considered by the author to be perfectly dry at such time when at a temperature of 70 degrees F. it refuses to adhere to a sheet of writing paper smoothed over it and pressed down hard by the palm of the hand. This condition at the very least should prevail before additional coats of paint are applied. However, as much additional time as this condition requires to consume should be given before it is attempted.

Volatile oils may be tested by allowing them to evaporate from a sheet of glass and noting whether there is a greasy deposit left on the surface. If this occurs it shows a substance which when entering into the liquid portion of a paint will seriously prevent the drying of it and cause an endless amount of annoyance, sometimes necessitating the removal of the paint entirely, which if not done would prevent the proper adhesion of more coats of paint.

The writer has noticed that the signs of the times show an increasing tendency, unfortunately, on the part of the general property owner to leave the question of maintenance and selection of materials to others.

#### Deductions and Conclusions.

After pursuing the subject of rust prevention it becomes very apparent that many questions are involved that do not clear the way for those who cannot give it much thought or attention. It does not take much of either, however, to deduce the following facts:

1. The property owner should be satisfied that the surface to be protected is as clean, dry, smooth and firm as it is possible to get it before his time, money or patience is expended thereon. Without this important condition any means to be employed would only be wasted. Inasmuch as the preparation of the surface, the employment of the proper kind of material and the quality of work done, when undertaken by a contractor, may easily be manipulated by him in such a way that he may greatly profit financially to the detriment of the owner, it is recommended that the owner purchase his own material directly and hire his men by the day to do the work. Even should the men put in more time than necessary, the chances are that the work will not have been slighted, and that the total cost of the job would be much less than the same quality of work and materials would be supplied by the contractor.

2. The owner should purchase his paint in different shades, using a different shade for each coat, so that the detection of omissions in thoroughly covering the surface may be readily accomplished. The paint should be delivered on the ground in sealed packages, guaranteed by the most responsible maker in whom the purchaser may have confidence.

3. It should be contained in receptacles that will maintain it in good condition and enable it to be thoroughly mixed or agitated during the progress of the work, so that the paint thus used is of a uniform consistency until the work in hand is fully completed.

The great difference in the specific gravity between pigment and vehicle causes the former readily to precipitate to the bottom in a short time, even in the very best paints, and the best results can only be obtained by energetically keeping the paint stirred up.

It is an important fact that the first coat of paint usually applied by the manufacturers on newly made metal work is of the cheapest variety, unless specifications and contracts to the contrary offset this result.

Every owner of property containing metal work that needs protection should thoroughly understand "what he needs as a preservative, and demand that it be properly applied by the painter."

Paint should be spread on a surface in temperatures between 50 and 90 degrees F., and should be spread on carefully that all air bubbles under the paint should be eliminated.

The application of paint with a machine or spray



should not be encouraged, for the reason that air bubbles get under the fine spray and prevent the close adherence of the paint to the surface. It also has a tendency to aerate the paint. The first coat on metal should not be quite as elastic as the succeeding coats. It should dry hard, tough and slightly yielding. Its subsequent hardening is somewhat prevented by the coat on top of it.

The last or top coat should dry more slowly than the one underneath, so as to withstand the drying tendency of the weather and meet expansion and contraction where it is mostly needed.

Black paints are the most opaque and should be used not only because the material out of which they can be made affords the production of the best protective coating, but also for the reason that the color presents a striking contrast to the color of rust or corrosion. When red or brown paints are used the appearance of rust can only be detected at times when close inspection is promoted, and this is very often deferred by oversight or neglect.

Too much importance cannot be attached to the necessity of preserving metal before corrosion or oxidation has taken place.

The loss that generally ensues when metal surfaces are not continually protected in every corner and crevice is rarely appreciated. The wasted metal resulting from one moment's chemical action can never be replaced to its former condition (commercially speaking), and the section so affected is oftentimes so very difficult and costly to replace, especially in hidden structural work and bridges, that these matters are in many cases postponed until the whole structure becomes condemned as dangerous and a new one needs to be built.

#### How to Specify.

Care should be employed by the purchaser of new structural work, bridges or sheet metal work, where the protective coating is furnished by the contractor, in seeing to the explicit and proper wording of the specifications, so that the right brand, make and best paint materials are clearly defined so as to leave no valid chance for substitution. This rule should always govern wherever and whenever good paint is wanted. Specifications for applying the paint should always state the number of coats wanted and that there should be no air holes, moisture, oil, grease or dirt under the paint; that it should be well brushed on by hand to a thoroughly cleaned and dry surface; thoroughly cover the surface, and be applied in dry weather between temperatures of 50 to 90 degrees F. (unless the paint is a special kind and is shown by the purchaser to especially require a different temperature for application).

This should never be left for engineers to do, for a wide diversity of opinion exists as to what make or brand should be used, even among those of many years' experience.

Furthermore, engineers or architects very often refuse to specify any particular make of paint, for obvious reasons. It savors of partiality and leaves room for severe criticism. On the other hand, if the contractor can evade supplying an established brand of high grade material and suit himself in the furnishing of paint made of raw materials selected by himself, rendering it impossible for the engineer (without giving the material a daily chemical analysis), to ascertain its true value, he has the chance to utilize the greater of the two evils to his own profit.

In cases where the engineer will not consult with the owner on the brand or make of paint to be used and specify it in the contract, the author suggests that the specifications read as follows: "All paint and paint materials used must be selected or approved by the owners before the same is permitted to be used. It shall be subject to the inspection and refusal of the engineer when the same is not branded or recognized as such." This would relieve the engineer of a responsibility which is not necessary for him to be expected to shoulder.

No engineer, in designing a structure, can make efficient allowance for decay, for the reason that the time, place and extent of such action are an unknown quantity and always will be.

Loss of life and property due to collapse resulting from decay is a serious theme to reflect upon. Any existing doubt as to the necessity of giving the work a good coat of good paint should be decided upon before it is too late.

(Conclusion.)

### Customs Decisions.

#### Cast Machinery Parts.

After a litigation covering two years, the United States Circuit Court of Appeals at Philadelphia has handed down a decision of considerable importance to importers of parts of machines. The test case stood in the name of John Bromley & Sons, Philadelphia, who objected to the action of the customs officers in levying a 45 per cent. duty on the articles as being composed wholly of iron partly manufactured. Instead, the importers alleged that the classification should be as castings, with duty at the rate of 8-10 cent per pound. In denying this contention the appellate tribunal lays down the rule that iron castings fitted as parts of machines, by drilling, cutting and other machine processes subsequent to the casting, are not dutiable as "iron castings," but at the higher rate. The decision states that by the careful work their character as mere castings has been merged into the higher mechanical plane of a manufactured article.

#### Agate for Scale Bearings.

The question of the classification, for dutiable purposes, of small pieces of agate, intended for use as bearings in scales, appears to be finally settled by a decision of the United States Circuit Court of Appeals at New York, rendered last week. The higher court reverses the Circuit Court, and holds that the articles come within the purview of the tariff provision for manufactures of agate, with duty at the rate of 50 per cent. ad valorem. Albert Lorsch & Co., New York, the protestants in the case, maintained that the agate should be returned for duty at the rate of 20 per cent., under the provision in the Dingley tariff for diamonds and other precious stones advanced in value. While the lower tribunal upheld this view, the Court of Appeals sides with the Government in the classification of the merchandise at the higher rate.

#### Alloy of Lead and Antimony.

The Board of United States General Appraisers has handed down a decision sustaining a claim made by L. Vogelstein & Co., New York. It is held that an alloy in chief part of lead, which contains 9 per cent. of antimony, is to be considered the type metal of commerce for dutiable purposes, and not assessable at the rate provided for lead in pigs. The question of the classification of the type metal turned on the percentage of antimony in the metal. The analysis made by the Government chemist and by a chemist employed by the importers varied. The board, however, holds that the test made by the chemist for the importers is more trustworthy than that made by the Government.

The annual meeting of the Otis Steel Company, Ltd., whose steel foundry and plate mills are at Cleveland, Ohio, was held recently in London, England. T. F. Thomson, who presided, said that while it was very satisfactory that the profits had been upon a sufficiently ample scale to allow of the appropriation of £52,390 to debenture redemption account and the consequent reduction of the debts owing by the company, its position would not be fully secured against the incidence of bad times until it was able to create reserves which could at critical moments be converted into cash for the purpose of meeting emergencies or equalizing dividends. With regard to the outlook, it was stated that the reaction from the exuberant industrial activity could not long be delayed.

It is estimated that the output of cast iron sash weights in the United States has reached 85,000 tons a year in recent years.

## The R-W Speed Variator.

A new mechanical principle is claimed for the device illustrated, which is intended to transmit power at variable speeds from a constant speed source. While it is based on the principle of using different diameters of a cone for obtaining different speed ratios, it is unlike a friction device in that the drive is positive, and it is unlike a cone of gears in that it is not disengaged to make a change of speed. The essential parts in the transmission are the cone, mounted on one of the shafts and containing circular rows of holes, known as gear pits, and the spur gear having conoidal teeth, feathered on a shaft parallel with the slant of the cone. Either one of the shafts may be the driving shaft. The principal novelty is in the shifting of the gear by sliding a longitudinal segment of the cone, while engaged by the gear, so as to register the latter with the next adjoining circle of pits; the means for accomplishing this is the most interesting part. The speed variator is the invention of G. L. Reenstierna and is being introduced by the R-W Speed Variator Company, Singer Building, New York City.

Certain geometrical properties of the forms of the

In its normal position these studs are spaced equal distances from the rib between the grooves. Two oppositely inclined cams, supported on pivoted arms, are adapted to be entered one at a time in these grooves, and these cams, shown at D and E, are of width sufficient to shift the slide A when contact is made with one or the other of the studs B and C a distance equal to the distance between the circles of pits, so that the gear is transferred from one row to the next. These cam arms are connected by links to the operating lever F, one above and the other below its pivot, so that a movement of F in one direction withdraws one cam and advances the other, and a movement in the opposite direction accomplishes the reverse. When the handle F is thrown toward the cone the cam E is introduced into its adjacent groove and, the cone rotating in the direction indicated by the arrow, when the stud G encounters the cam the slide A is shifted, bringing the spur gear in mesh with the next row of holes to the left. A movement of the handle F away from the cone throws the cam D into position to engage the lug B and causes the gear to be traveled one step to the right. The manipulation of the lever F can be best understood from the view given in Fig. 2, where the same parts are designated by the same letters. In this view the parts are in position to accomplish the

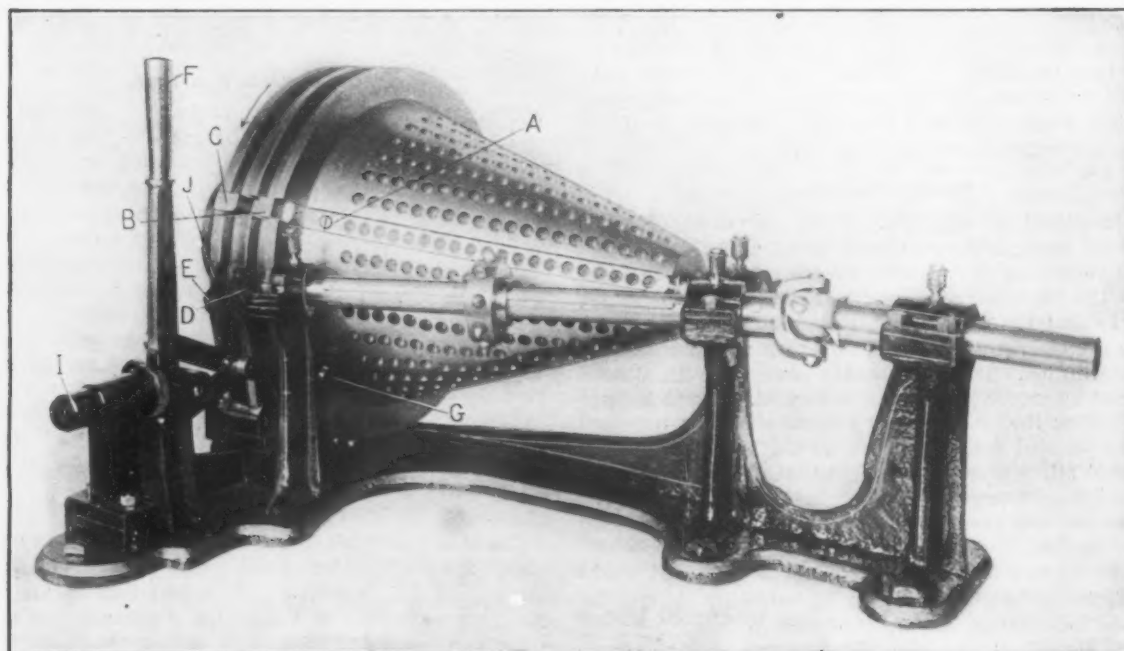


Fig. 1.—A New Variable Speed Power Transmission Made by the R-W Speed Variator Company, New York.

parts used make the scheme of speed changing possible. It is peculiar of the cone, for example, that if the number of pits in the successive circles from right to left increase by arithmetical progression the circles themselves are equidistant from each other—that is, if the circle nearest the apex has 11 pits, the next 12, the next 13, and so on, the distance from the first to the second row, from the second to the third, and so on, must be the same. Consequently the gear when shifted equal steps in either direction will be in mesh with a circle of pits at each step. By arranging the circles of pits so that one pit of each circle will lie in an element of the cone—that is, with the centers of these pits in an axial plane—this line of pits can be contained in a sliding segment, as shown in Fig. 1. This segment, shown at A in Fig. 1, is capable of movement in either direction a distance equal to the space between the circular rows of pits.

To make a speed change it is essential that the sliding segment of pits be moved at the instant in the cone's rotation when the slide is parallel with the gear shaft—that is, when a tooth on the spur gear engages one of the pits in the segment and no other. Shifting the slide at this instant will carry the gear to the next row of pits to either side. At the base of the cone are two grooves, which the slide crosses, and projecting from the slide into the grooves are two studs, B and C. With the slide

shifting of the spur gear toward the small end of the cone.

Following each action of the cam the sliding segment A is restored to its normal position by contact with one or another of the inclined guides shown at G in Fig. 1 and H in Fig. 2. If the gear has just been shifted to the right, the shoulder on the lug B extends outside of the flange at the base of the cone, and comes in contact with the guide G, when it is returned to neutral position. The same happens when the slide has been shifted to the left and the lug C comes in contact with the guide H in Fig. 2. The method of connecting the cam arms with the controlling lever makes it impossible to throw both cams into action at one time. In order that the cams may be returned to neutral position following each manipulation, when the hand is removed from the operating lever a spring pressed plunger, I, is provided. The inner end of this carries a disk which bears against the operating lever, tending to hold it in vertical position, as a movement to either side of the center will cause the spring to be compressed. It will be seen, therefore, that releasing the lever causes it to be thrown to its inoperative position, with both cams retracted from their respective grooves.

The method of changing speeds is then apparent. Only one step is made at a time, and the lever is held



In the position to produce the direction of change required for a time sufficient to cause the gear to be traveled as many steps as may be necessary. When the right speed has been obtained the handle is released. Obviously it is important to provide some safety device at the two extremes of the movement of the sliding gear, so that it cannot be passed beyond the last circle of holes in either direction. An ingenious means has been provided to make such an accident impossible. In one of the pits in each of the two outside circles is a button, which is depressed when a tooth of the spur wheel enters that pit. Depressing this button causes a shifting of the sliding member J, throwing an inclined cam face on this part into one or the other grooves. If the button depressed is in the last circle of pits toward the base of the cone the cam mentioned is thrown into the groove in advance of the lug C and throws the cam E out of the groove, preventing it from striking the lug C, and preventing a further shifting of the sliding gear to the left. Similarly a button in the last row of pits to the right throws the cam on the member J, so as to throw out the cam D and prevent the shifting of the sliding gear further to the right. The mechanism connecting the buttons and the cam J is inside of the cone, but may be partly seen in Fig. 2.

The functions of the speed variator, which are unique in a device of its character, are the ability to afford

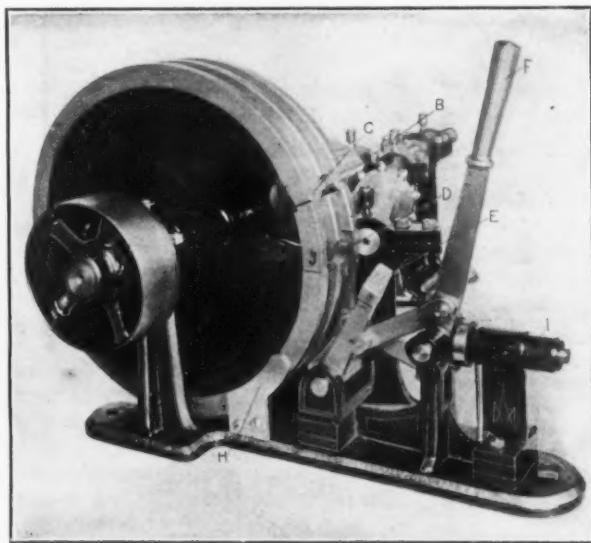


Fig. 2.—End View of the R-W Speed Variator.

positive changes of speed by a gear drive and to accomplish these changes while running under power or with a load, without taking the gears out of mesh. The illustrations and the description apply to a model which is now in the company's office, but in the application of the device to various commercial uses there will be a number of changes in the details. For example, it will be possible to provide in the hollow space within the cone, reversing mechanism, so that the power may be transmitted from the cone in either direction. Obviously it is necessary with the present method of shifting to drive the cone in a single direction, and if a reverse is to be secured it must be secured outside of the device itself. The present method of shifting will probably be modified to produce the instantaneous changes of speed without noise or shock while the parts are revolving upward of 2500 revolutions. In the present device there is a considerable blow when a lug strikes the shifting cam, and the inventor already claims to have developed an improved mechanism for this purpose.

There are three angles in which the cone can be made and still have the locations of gear pits geometrically correct, these being such as to make the difference in the number of pits in adjoining circles one, two or three respectively. The cone can be made any length, which, combined with different angles, makes it possible to produce any ratio and number of positive changes. The same number of positive speeds can be produced in reverse.

The device is claimed to possess durability, efficiency, simplicity and ease of control, and to be absolutely fool proof in its operation. The leverage, lifting and shearing strength of the conoidal teeth in the spur gear are very great, so that although there is only one tooth engaged at a time, instead of two or more as in a spur gear, there is sufficient strength to transmit the required power. The spur gear teeth are inserted, and are made of steel of great elasticity and strength. As these teeth will be the parts subject to greatest wear a simple construction has been adopted, and they can easily be removed and replaced when they show serious wear or become broken. A machine has been invented for cutting the gear pits in the cone on an efficient gear principle. At the bottom of each gear pit is a hole extending clear through to the inside of the cone, making the pits self-clearing of any dirt or accumulation in the hole, and also protecting the mechanism against injury by matter entrained in the pits.

The device is probably to be applied first in a variable speed countershaft, to give a number of speeds forward and reverse to the driving of all kinds of machinery. Another application which will shortly be put into effect is that of a transmission system for automobiles.

### Economy in Power Plant Supplies.

The purchase and storage of supplies is of great importance in power plant operation. In some stations the engineer in charge acts as purchasing agent for all the supplies, and it is desirable to find out just what amount should be carried in stock to avoid an excessive idle investment on the one hand and a serious lack of flexibility on the other.

In general, it is cheaper to buy supplies in bulk, but it is important to take advantage of the most favorable market conditions. The nearness of the supply source, time of delivery, wearing and lasting qualities as judged from previous experience, cost of shipping and handling, value of storage space and interest on stock maintained should all be considered. It is generally out of the question to carry very large machine parts in duplicate, such as cylinder heads, piston cranks, crossheads and similar large and relatively expensive equipment, but packing, carbon brushes, valve parts, wearing portions of oil switches, waste, gaskets, small pipe stock and extra armature coils are comparatively inexpensive, and enough of these should be kept on hand in every power plant to insure continuous operation under all probable conditions of service.

In large plants it will pay to keep account of the quantity and value of supplies and spare parts on hand, and to compare these figures with what the operating records indicate the plant should have, allowing for the money value of each excess or under supply, and the saving effected by bulk purchases. In a great many cases the excess value of supplies over the normal yearly consumption would probably be so small that the interest on the investment would be inconsiderable. It is desirable to establish some sort of upper and lower limit to the quantity of each kind purchased, however, and the time spent in getting a closer idea of the life of different wearing parts under definite service may lead to wiser selections of special supplies and equipment as well as avoiding overstocking the power plant storeroom or under supplying the station.

The Pennsylvania Railroad Company states that there is no truth in the report that it has canceled an order with the Baldwin Locomotive Works for 425 locomotives. The only order that the company has placed with the Baldwin Works this year is one placed a week or two ago for 25 consolidated freight locomotives for delivery next month. In denying the same report Samuel Vouclain, general superintendent of the Baldwin Locomotive Works, states that the company has had practically no cancellations of orders for locomotives, and that while it has no intention of hiring new men, it will not reduce its working force this year.



## The Smith Triple Speed One Belt Countershaft.

Triple speed countershafts, such as are commonly used to drive monitor lathes, milling machines, chucking machines, screw machines, &c., of the heavier type, usually employ three friction pulleys on the countershaft and three overhead belts from as many line shaft pulleys. In the new countershaft illustrated the same results are obtained—namely, a slow and a fast forward speed, and a reverse speed, with only one belt from the line shaft to the countershaft. It is manufactured by the Smith Countershaft Company, Oliver Building, Boston, Mass., which for some time has been making the one belt reversible countershaft illustrated in *The Iron Age*, March 31.

hub the spur gear *c*. Through three intermediate pinions mounted on the spider *f* the spur gear *c* is engaged with the internal gear *g*. The spider *f* is integral with the sleeve *b*, and the internal gear *g* with the sleeve *c*. Obviously, when either of the frictions I or IV are disengaged the shaft is idle and the driving pulley may run continuously. Alternate movements of one shipper fork are used to engage frictions I and II, and similar movements of a second shipper fork engage frictions III and IV, the forks of these shippers operating cone spoons.

To obtain the slow speed forward the shipper stick is thrown to the left, which simultaneously engages frictions I and III. In this condition the internal gear *g* is held stationary and the spider *f* is clutched to the shaft. The result is a speed of rotation one-half that of the driving pulley. Throwing the shipper stick to the right

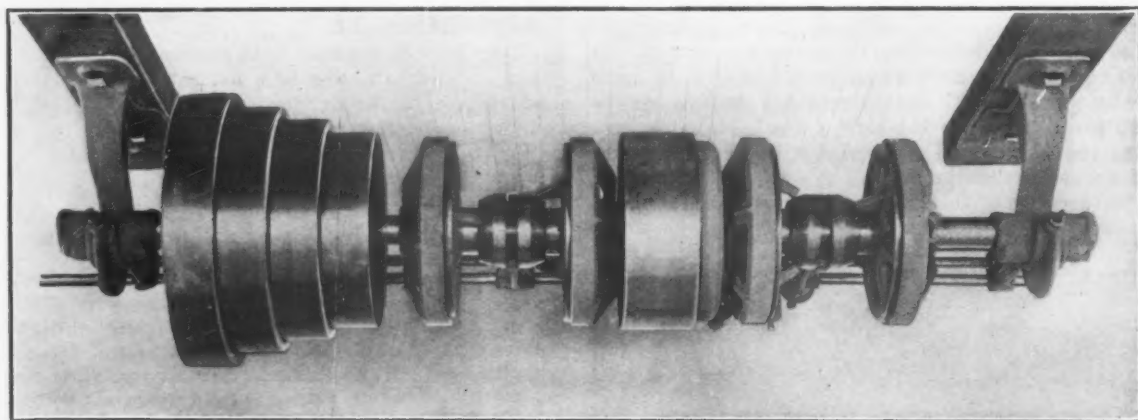


Fig. 1.—The Triple Speed One-Belt Countershaft Made by the Smith Countershaft Company, Boston, Mass.

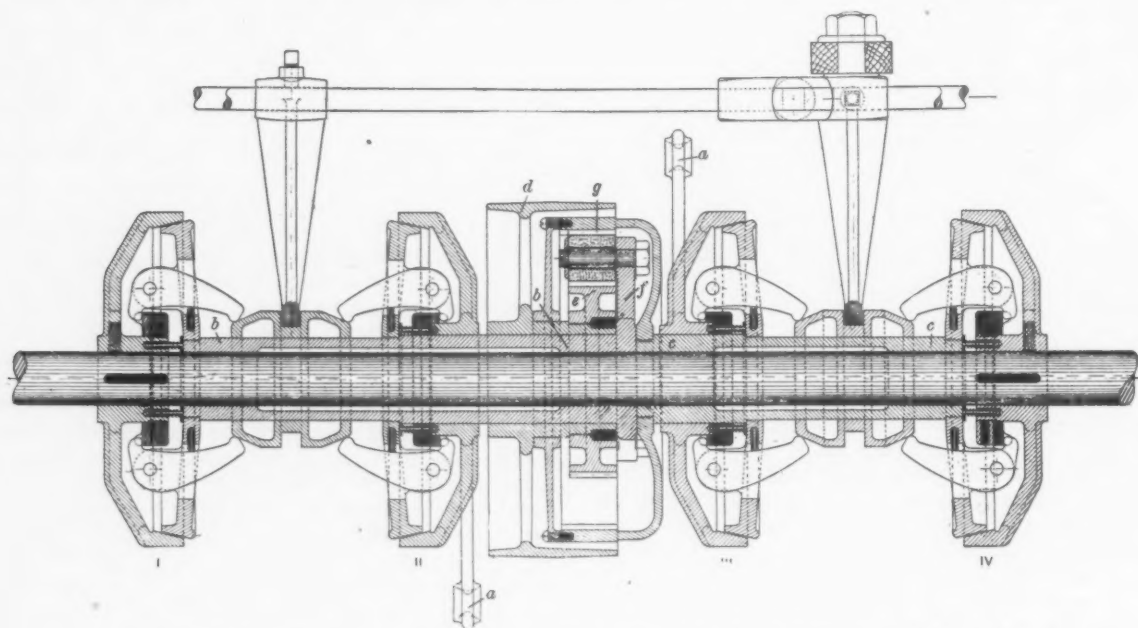


Fig. 2.—Sectional View of the Speed Changing Mechanism of the Smith Triple Speed Countershaft.

1904. Many of the features of the new countershaft are similar to those of the original countershaft having only one speed in each direction, and in the main it is an extension of the principles contained in the first production.

Fig. 1 is a general view of the countershaft with the shipping stick omitted, and Fig. 2 is a section showing the construction. For convenience the four frictions employed are designated as Nos. I, II, III and IV. It will be seen that the female members of frictions I and IV are keyed to the shaft, and those of frictions II and III are anchored to some stationary overhead support by means of the extension pieces *a a*. The male members of frictions I and II are secured to a sleeve *b*, which is a running fit on the shaft, and similarly the male members of the frictions III and IV are secured to a sleeve *c*, also loose on the shaft. The driving pulley *d* is a running fit on the sleeve *b*, and carries on its extended

engages frictions II and IV, which causes the spider *f* to be held stationary and the internal gear *g* to be clutched to the shaft, causing the shaft to run in the reverse direction. A double movement is required to obtain the high speed forward. The shipper stick is first thrown to the left, engaging frictions I and II, and then latch *h* in Fig. 3, which shows a detail of the shipper stick and fork rod, is withdrawn by gripping a latch handle near the lower end of the stick. The stick is then thrown to the right, disengaging friction III, but leaving friction I engaged, and engaging friction IV. This causes both the spider *f* and the internal gear *g* to be clutched to the shaft and compels the shaft to rotate at the same speed as the driving pulley. A subsequent movement of the shipper stick to the left automatically re-engages the latch. A neutral position of the shipper stick will bring the countershaft to a standstill regardless of what drives

are being used, and it is impossible to lock the frictions so as to throw off the belt.

The countershaft has the advantage of a constant belt speed velocity and continuous direction, so that there is not the shock that comes from reversing idle belts. One of the greatest advantages is that there is only the strain of one belt between the line shaft and the countershaft, and the tension necessary to give driving power does not impose as much friction as a greater number of belts would entail. The slow drive being through gears is of such a ratio that a 10-in. pulley is capable of pull-

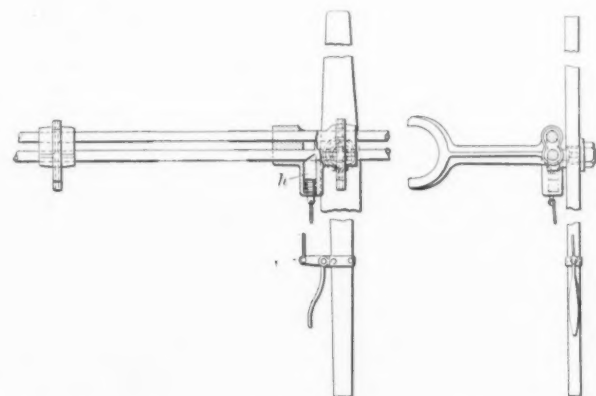


Fig. 8.—Details of the Controlling Lever and Shipper Forks.

ing as heavy a load as an 18-in. pulley driven with an open belt. The countershaft is made self-oiling throughout, so that it requires very little attention.

### The Electric Motor in the Brass Foundry.

In most brass foundries little power is required to operate machinery, and can generally be most favorably supplied by electric motors. Recently in an East Boston foundry a 5-hp. motor was installed to take the place of a steam boiler and engine, which had given trouble in previous cold seasons, and which had to be run with the fires banked a considerable part of the time at poor efficiency. The motor was installed on an overhead platform, which released valuable floor space for other uses, and was employed to drive a washer designed for separating copper and other metals from the molding sand. Another brass foundry installed a 5-hp. inclosed motor to drive a blower supplying air to four crucible furnaces and a reverberatory furnace for melting babbitt, a sprue cutter, magnetic separator, tumbling barrel and two emery wheels. In a street railroad brass foundry, where crude oil was burned in the melting furnace, a 2-hp. motor was used to operate the air compressor, and a second small motor connected to the oil pump. The cleanliness, economy and flexibility of the electric drive justify its application to small installations of this character no less than in the heavier fields of general foundry and machine shop practice.

### Allis-Chalmers Hoisting Engines for the New Jersey Zinc Company.

The New Jersey Zinc Company, New York City, has recently placed contracts for two 22 x 48 in. Allis-Chalmers duplex direct acting Corliss hoisting engines, with double drums, to be installed at Franklin Junction, N. J. The engines are each equipped with nonreleasing Corliss valve gear and drive two drums, each 10 ft. in diameter by 5 ft. 5½ in. face. These units will handle a total load of 19,562 lb. up an incline of 47½ degrees from the horizontal, from a vertical depth of 1050 ft., with steam pressure at 140 lb. per square inch. The load is made up as follows: Ore, 10,000 lb.; skip, 6000 lb.; 1425 ft. of 1¼-in. rope, 3562 lb.

The engines are fitted with parallel motion post brakes, set by weight released by steam and the Stephenson link motion reversing gear, with one drum keyed to

the shaft and the other driven by the Allis-Chalmers improved Lane friction clutch.

All the above mechanism is operated by auxiliary steam engines, with oil controlling cataract cylinders above, operated from the engineer's platform by means of improved floating lever devices, except in the case of the clutch engine, which will have a positive motion up or down.

### Hoarding by Banks and the Business Situation.

At a fully attended meeting of the Board of Directors of the Merchants' Association of New York the following resolutions were adopted by a unanimous vote:

*Resolved*, That the Board of Directors of the Merchants' Association of New York submits the following views and recommendations concerning the present financial situation for the consideration of its members and others, hoping thereby to promote the common welfare and to accelerate the resumption of business under normal conditions—viz.:

1. The chief present difficulty is stringency caused by the hoarding of the circulating medium of the country.
2. All financial leaders and practically all banking institutions have united in urging the people to cease this hoarding and to restore the circulating medium to its customary channels and uses.
3. The banks, above all others, should set the example thus implied; some of them have done so, but many are alleged to be doing just what they condemn in others. For example, some are known to be holding cash reserves ranging from two to five times the normal ratio.
4. The purpose of a surplus or cash reserve is for use in time of need; to withhold it from such use is to defeat its true purpose, tends directly to intensify the condition which it should alleviate, and is a selfish effort to protect the individual bank at the expense and to the injury of the banks collectively.
5. Checks payable "through Clearing House only" are useful for local settlements, but do not pay nonlocal debts. The business of all large manufacturing and mercantile concerns is chiefly nonlocal, and cannot go on if local funds are everywhere tied up. Interstate exchange is essential to the conduct of interstate business, and this constitutes the greater part of our domestic exchanges. Provision for the settlement of local indebtedness is helpful, but provision for the settlement of non-local indebtedness is essential, and, therefore, still more helpful.
6. If all concerned, and in all parts of the country, will recognize and act upon these self-evident conditions which underlie our commercial and financial system; if each corporation, bank and individual, instead of hoarding currency, will pay it out or deposit it in bank, and, instead of deferring settlements, will pay every account as promptly as possible, then, as predicted by Secretary Cortelyou in his notable address to the Merchants' Association on the 14th inst., there will be "within 24 hours an almost complete resumption of business operations," and the present stringency will become a thing of the past.
7. Our crops are large, our mining, manufacturing and commercial facilities greater than ever before, our transportation facilities overtaxed to handle the business which is offered to them, our population is larger and its consuming power greater than at any previous period, and no undue accumulation of merchandise is known to exist.
8. No comparison can fairly be made between the sound basic conditions prevailing to-day and the unsound conditions which obtained in 1893. We are now firmly on a gold basis, with an overflowing National Treasury. The recent trouble has been attributed to an "excess of prosperity." Wise legislation by Congress to make our currency elastic enough readily to respond to business conditions may confidently be looked for this winter. With all of these favoring conditions the onward march of our national prosperity will surely be resumed without delay.
9. Let every good citizen solicitous of the welfare of our country do his best to accelerate the return to normal conditions by continuing his business operations without alarm and by assisting in the present movement to bring all the money now lying idle into active circulation and all will be well.

The secretary of the Merchants' Association has been instructed to communicate the views of the directors, as contained in the resolutions, to all the prominent commercial organizations in the United States, with the request that they adopt similar resolutions.

The malleable casting industry has had a greater proportionate growth in the last 12 months, according to the *Foundry*, than any other branch of the foundry trade. Many extensions have been made to existing plants, and the number of new works erected in this period establishes a new high record. Although the bulk of the new tonnage will be consumed by the railroads and makers of agricultural implements, a large portion will consist of pipe fittings.

## The Illinois Steel Company's New Rail Mill.

The South Works of the Illinois Steel Company, located on the shore of Lake Michigan, at South Chicago, is situated on a strip of land of irregular width, approximately  $1\frac{1}{2}$  miles long, including an area of nearly 300 acres, and is at the present time the most important Western unit in the chain of plants embraced in the organization of the United States Steel Corporation. The history of this plant has been one of constant growth, and though its supremacy as the leading Western steel producer is threatened by the ambitious proportions of another of the corporation's works now in course of construction at Gary, Ind., its advancement has not been arrested by this new development.

The latest addition to the finishing departments of the South Works is a new 24-in. light rail rerolling mill, known as rail mill No. 2, which has just been completed and is now in operation. It was the aim in the design and construction of this mill to embody in it every improvement suggested and approved by modern practice and experience. The site chosen for the new mill is near the west line limit of the plant inclosure and about midway of its length, its location being dictated by the availability of space at this point.

The building, which is of steel construction covered with corrugated iron, was built by the company's own workmen. The main mill building is 60 x 346 ft., and the finishing department 45 x 360 ft. By reference to the plan view, Fig. 1, it will be seen that the arrangement of the plant provides for the entrance of material at the furnaces in the south end and its passage through the mill in direct line to the finishing department. Though constructed on established lines, some features of interest in furnace design, electrical drives and other details have been introduced in its equipment, reference to which is made further on.

### The Rail-Heating Furnaces.

In a mill of this kind, designed essentially for rerolling rails, the heating furnaces are necessarily of large dimensions, and to secure the most economical results in heating and handling especial attention has, in this case, been given to their arrangement and construction. Two furnaces have been built and space for the erection of a third of the same size as the smaller of the two is provided, as shown by the dotted lines in the plan view. The smaller of the two furnaces is  $17\frac{1}{2}$  x 25 ft. and the larger is 17 x 35 ft. The latter is of exceptional size, and will accommodate a full carload of standard rails at one time.

Departing from the more common design of arched roof, the 35-ft. furnace is constructed with a flat suspended roof supported by 24 3-in. double extra heavy cooled pipes. The rails for this furnace are received from a 10-ton electric traveling crane, which drops them upon an inclined bed leading to a set of driven rollers. Charging is effected by hydraulic pushers, which handle one rail at a time. After leaving the outer rollers they pass through a small aperture into the furnace, and are carried over water cooled driven rollers. When clear of the furnace walls at each end the rail is pushed from the rollers by water cooled fingers on skids, which are made of pipe, also water cooled, as are the shells which protect the rollers and fingers, the latter being driven by hydraulic power. As the rail passes slowly from the charging to the drawing end of the furnace it arrives at the outer edge of a magnesite bottom, which extends for a distance of about 4 ft. to the drawing side, and is there turned over upon this magnesite bottom to remove spots resulting from contact with the water cooled skids. To withdraw the rail when heated the furnace is provided at the drawing end with a pair of pinch rolls at each side. The castings and machinery equipment used in the construction of this furnace were made by the American Machine & Mfg. Company, Cleveland, Ohio.

The smaller of the two furnaces is constructed in the usual way and is used for rails cut to lengths, both furnaces being also arranged to accommodate billets up to 8 in. square. Its machinery equipment was furnished by

the Morgan Engineering Company, Alliance, Ohio; the castings were made by the Davidson Foundry Company, East Chicago, Ind. Material is supplied to this furnace, as it will also be to the third furnace when erected, by the charging crane serving the large furnace. Both furnaces are equipped with Dyblle gas valves and butterfly air valves.

### The Rolling Mills.

From the furnace the rails are carried to the roughing rolls over an approach table, which is provided with a flange trip switch that rights them for entrance into the roughing rolls, to which they are directed by adjustable guides in the front roughing table. Fig. 2 shows a view of the mill from the front end of this table, which includes the roughing, intermediate and finishing trains of rolls. These are of the three-high type, with rolls 24 in. in diameter, and were made by the United Engineering & Foundry Company, Frank Kneeland Department, Pittsburgh, Pa. The housings, pinions and bed of the roughing and intermediate trains are shown in Fig. 8. The roll housings are all of cast steel, with one-piece caps extending across from one to the other, and the boxes are so constructed that the alignment of the rolls may be adjusted without shutting down the mill. The rolls and boxes, together with the carriers, can be moved at one time by a special roll changing device, which consists of lugs cast on the outside of the housing caps for attaching the lifting cables; the cables are run around the jockers of the bottom roll, and by lifting on the one-piece caps they hoist them and the three rolls with their brasses. Thus by the use of the two cranes one set of rolls may be removed and another installed with very little loss of time.

The mill has capacity to roll rails from the small sections up to 85-lb. standard section, from either rerolling sections or 8-in. blooms. The passes of the rolls are so designed that the rails are rolled on the angle instead of on the side, as is usually done. The front and back roughing tables are of the tilting type and were constructed by the American Machine & Mfg. Company, Cleveland; the approach tables were made in the company's shops.

As may be noted in Fig. 3, which presents a view of the mill from the rear, the back finishing table is so located that the piece is delivered from the lower pass of the intermediate train to the upper pass of the finishing train, the front finishing table being stationary. The intermediate rolls are served by a tilting table and a stationary back table, all of which are motor driven.

### The Hot Saws and Handling Equipment.

From the finishing rolls, as shown in Fig. 4, the rails are carried over the hot saw run, which is of special design and was furnished by the Alliance Machine Company, Alliance, Ohio. It is so arranged that by the use of a continuous line shaft the saw shoes on the table may be shifted to allow the cutting of rails to any desired length and the rollers may be moved without disconnecting any member of the table. In the saw gang there are three 42-in. hot saws of the swinging or pendulum type, which are supported by shoes and are adjustable to the sawing of rails of any length over 14 ft. Each saw is driven independently by a 30-hp. motor. By means of a square line shaft driven by a motor the three saws are fed through the rail section simultaneously. These saws were designed and built by the United Engineering & Foundry Company, Pittsburgh, Pa.

Fig. 5 is a view of the hot bed tables, which were made by the American Machine & Mfg. Company. These tables are furnished with cold dogs or pull-ups, arranged to feed one or more rails to the roller straightening machine, as desired. The latter is equipped with eight rollers, and is included in the equipment furnished by the United Engineering & Foundry Company. Passing onward, the rails are carried to the run out table of the finishing end, which is provided with a stopper at each dumping bed. There is also at each bed a kick-off that



delivers the rail to the gag presses, also built by the United Engineering & Foundry Company. The machinery of the finishing end includes four gag presses, six punches and a cold saw, the latter located in the center of the building. Rails to be cold sawed are kicked back on the driven table for delivery to the saw. In

capacity, is installed in the motor building. All of the crane equipment was supplied by the Whiting Foundry Equipment Company, Harvey, Ill. The entire machinery of the mill, with the exception of a few hydraulic machines, is electrically driven, which although not unprecedented in rolling mill practice, is by no means com-

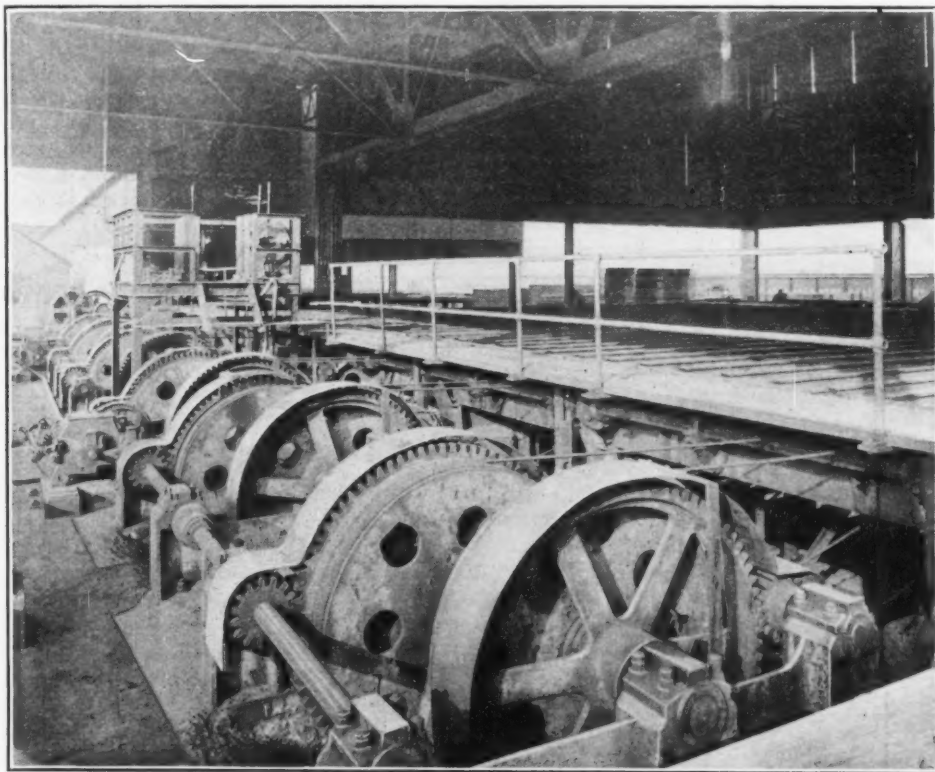


Fig. 5.—View of the Hot Bed Tables Made by the American Machine & Mfg. Company, Cleveland.

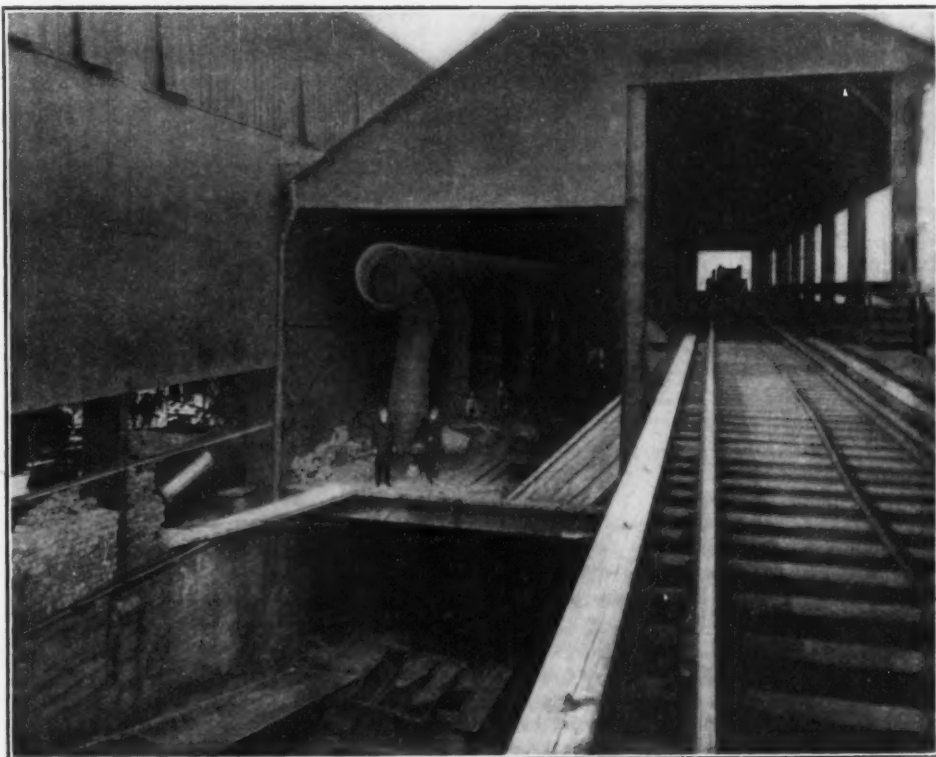


Fig. 6.—View of the Inclined Switch Track from Which Coal Is Delivered to the Gas Producers.

addition to these machines there are four three-spindle Sellers rail drill presses.

The carrying equipment includes four overhead traveling cranes. Two of these, which serve the mill proper, are of 60-ft. span and 25-ton capacity each; another unloading and charging crane of 33-ft. span and 10-ton capacity serves the furnaces, and a fourth, of 50-ton

mon. The mill is driven by four three-phase induction 25-cycle 2200-volt Westinghouse motors, two of 1200 and two of 600 hp. each. The motors are direct connected with the roll trains, being mounted in sets of two each on the main mill shafts, one of which drives the roughing and finishing mills, and the other the intermediate train. Each set is composed of one 1200-hp. 24-pole and

one 600-hp. 12-pole unit, designed to run at from 80 to 120 rev. per min. When run at the low speed both motors in each set are run together, but when speeded up to 120 rev. per min. the 600-hp. motors are cut out, the load then being carried by the two 1200-hp. motors.

#### The Power Plant.

In the interior view of the motor room, shown in Fig. 7, is seen the set of motors on the intermediate roll shaft. The usual switchboards, transformers and resistance coils complete the equipment of the motor room, which is 40 ft. high, 33 x 160 ft., finished with tile floor and walls, mercury vapor lights and fire doors. While not the first instance of the kind, somewhat of a departure from usual design in flywheel construction will be observed in the ponderous flywheels on the two main mill shafts, both of which are clearly shown in the interior

Being operated entirely by electricity, no boiler plant has been installed in this mill, and it therefore became necessary to devise means whereby steam might be generated in the producers. This condition was met by introducing attachments described as humidifiers, which are somewhat of an innovation in gas producer equipment. The humidifiers proper, which were made by the James G. Heggie Boiler Works, Joliet, Ill., consist of upright steel drums equipped with a number of screen baffle plates staggered in such a way that the hot water falling from the top over the plates and through the air blast is sufficiently vaporized to supply the combination of steam and air required, as in the usual process. The hot water is supplied by inclosed water heaters about 4 x 18 in. x 6 ft., inside measurement, made of plate steel, four of which are installed in each of the six producers.



Fig. 7.—View of the North End of the Motor Room, Showing One 600-Hp. and One 1200-Hp. Motor Mounted on the Intermediate Roll Shaft.

main mill views. These wheels weigh 50 tons each and are 22 ft. in diameter, with 22½-in. face. The steel rim is cast in two parts and is supported by a double web of 1½-in. rolled steel plates, secured to the rim by 2½-in. through bolts. The wheel is further strengthened by rolled steel hub plates, 1½ in. thick, on both sides, which in addition to being riveted to the web plates are held by 3-in. through bolts. An unusual feature of this construction is the extreme thoroughness of its finish, the entire surface of web and rim being machined and all bolts turned to a driving fit. These wheels, which were turned out by Mackintosh, Hemphill & Co., Pittsburgh, Pa., run with extreme smoothness and accuracy.

The gas supply required by the present equipment is produced by six continuous producers, four being of the Duff type and two of the Bradley type. Similar producers have been successfully used in other mills at the South Chicago plant. Ordinarily the generation of gas in producers of this type necessitates the use of boilers for generating the steam required to carry on the process.

These are connected so that water circulating through them will reach the humidifier at about 200 degrees F. The air thus moistened or humidified is piped to the producers in the usual way.

Two 8-in. Sturtevant blowers supply the air blast necessary for combustion and, like the rest of the machinery in the mill, these fans are electrically driven. An underground system of flues for carrying the gas to the furnaces has been devised to avoid obstructing the travel of the overhead cranes. Ordinarily Illinois coal of indifferent quality is used in the producers with good results. Coal is delivered to the charging room from an overhead trestle, as shown in Fig. 6, upon which the cars are drawn over an inclined track by an electric winch.

At each end of the mill steel viaducts afford safe passageways over the narrow gauge transfer tracks, and similar provision is made for crossing the main shafts on the west side of the mill. Lateral concrete subways also run underneath the mill rolls, with side chambers arranged to receive the scale from the rolls. This is de-

posited on the floor of the chamber and is shoveled out into steel boxes set in the bottom of side wells, from whence they are drawn when full by the electric mill crane. By this arrangement scale accumulation is removed with a minimum of labor and delay.

When the mill has attained its proper working capacity it will have an output of 10,000 tons of rails per month, operating on rerolling sections. An idea of the accuracy of construction and perfection of detail in the mill's mechanical equipment is furnished by the fact that starting within a couple of hours after power was first applied and the wheels turned over, perfect rails were produced within the first two or three passes. William J. Todhunter, under whose supervision the mill was erected and who has for a number of years been connected with the Illinois Steel Company, will superintend the operations of the mill.

#### Tungsten and Vanadium Production.

In the United States in 1906, according to the annual report of the United States Geological Survey, prepared by Frank L. Hess, there were produced 928 net tons of tung-

sten which is soluble in water. The roasted material is then leached and a ferric acid added, which precipitates the vanadium in the form of an iron vanadium compound. This is shipped to Niagara Falls and smelted by electricity to a ferrovanadium, running about 25 to 27 per cent. vanadium. A company has built a plant at Pittsburgh, Pa., for the manufacture of ferrovanadium from ores imported from near Cerro de Pasco, Peru. The ore is a remarkable new sulphide of vanadium, called patronite, containing about 15 per cent. of vanadium. The deposits are said to be large.

#### The Impairment of Credit.

James J. Hill, addressing the Commercial Club of Kansas City, Mo., at its annual dinner November 19, referred as follows to the present financial and industrial situation:

Attacks, not on individual transgression, not on dishonest finance, but upon existing business systems, representing the fabric of society itself, may destroy, by impairing credit, what a generation could not rebuild. Political campaigns in many States have been made on the

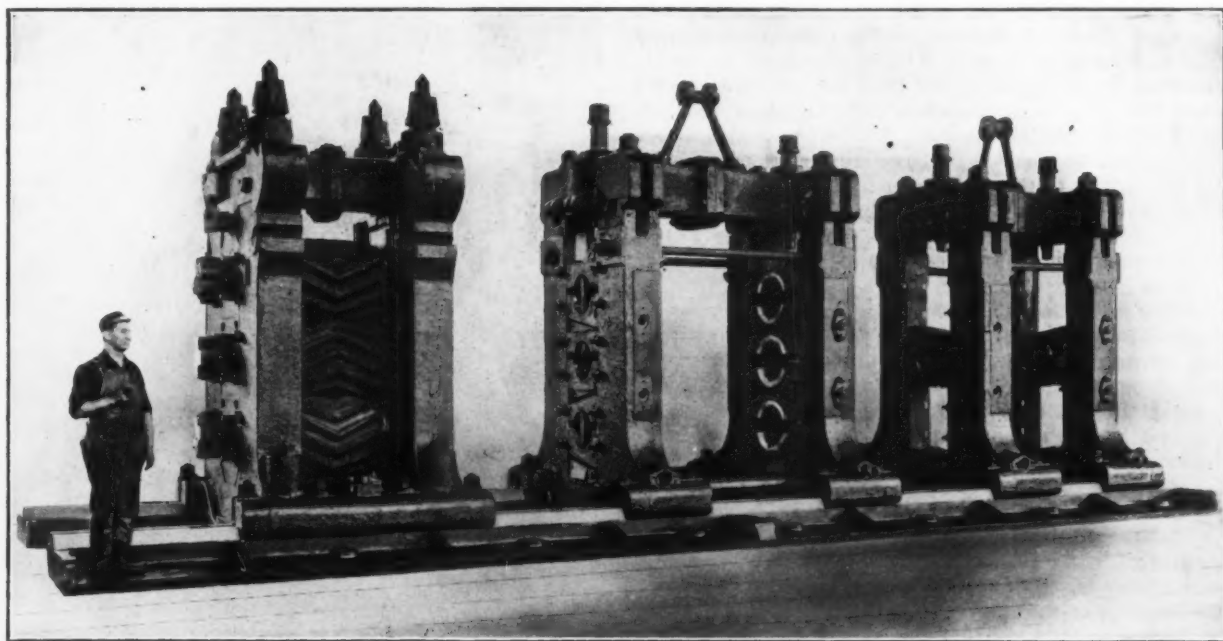


Fig. 8.—The Housings of the 23-In. Rail Mill Built by the United Engineering & Foundry Company for the Illinois Steel Company.

sten ores, worth, as nearly as could be learned, \$348,867. The output for the year is a gain of 125 tons, or 15.56 per cent. in quantity and of \$80,191, or 29 per cent., in value over the known production of 1905. Boulder County, Colo., produced 565 tons, more than 64 per cent. of the total output, valued at \$221,627. The price averaged about \$376 per ton, for 60 per cent.  $WO_3$ , but varied from \$3.50 to \$7 per unit. The only imports of tungsten reported are 26 tons of ferrotungsten, valued at \$28,289. The percentage of tungsten contained is unknown. There was considerable activity in tungsten mining in California during the year, and there will probably be still more in 1907. The output from Arizona for the year was small. A few tons of tungsten ore were shipped during the year from Lordsburg, N. M.; Loomis, Wash., and Jardine, Park County, Mont. About 60 tons of scheelite were put on the market from Park County, Mont.

During 1906 the actual production of vanadium from its ores was begun in Colorado, and a small output was made. A reduction plant was established at Newmire, another plant, at which some vanadium concentrates were made, was put up on Dolores River, 4 miles below the mouth of Disappointment Creek and 20 miles from Cedar Post Office. At Newmire roscoelite, occurring in a sandstone to which it gives a dull green color, is roasted with salt, converting the vanadium to a chloride,

issue of a general assault on the integrity of railroad property and management. There has followed a wild raid, in which over 170 acts more or less confiscatory of railroad property were enacted by the Legislatures of more than a score of States. The consequences to the transportation system, to railroad construction, and through these to the price of farm products and to the success of every form of business have already made themselves felt, and the country shivers under the blow. Before we again realize a favoring disposition to invest there must be a different temper, a larger view of justice, a better appreciation of what the railroads of the United States have done and are doing as compared with those of the rest of the world, and a settled policy of fair and reasonable liberal treatment and protection for the future.

The American Pig Iron Storage Warrant Company, a New Jersey corporation, has filed a certificate of decrease of capital stock from \$966,900 to \$50,000. George H. Hull is president and George H. Hull, Jr., vice-president. The office of the company is at 44 Wall street, New York.

The Allis-Chalmers Company, Milwaukee, Wis., has been awarded a gold medal for electric generators and motors displayed at the Jamestown Exposition. A second gold medal has been granted for taste and design in the erection of the exhibit.



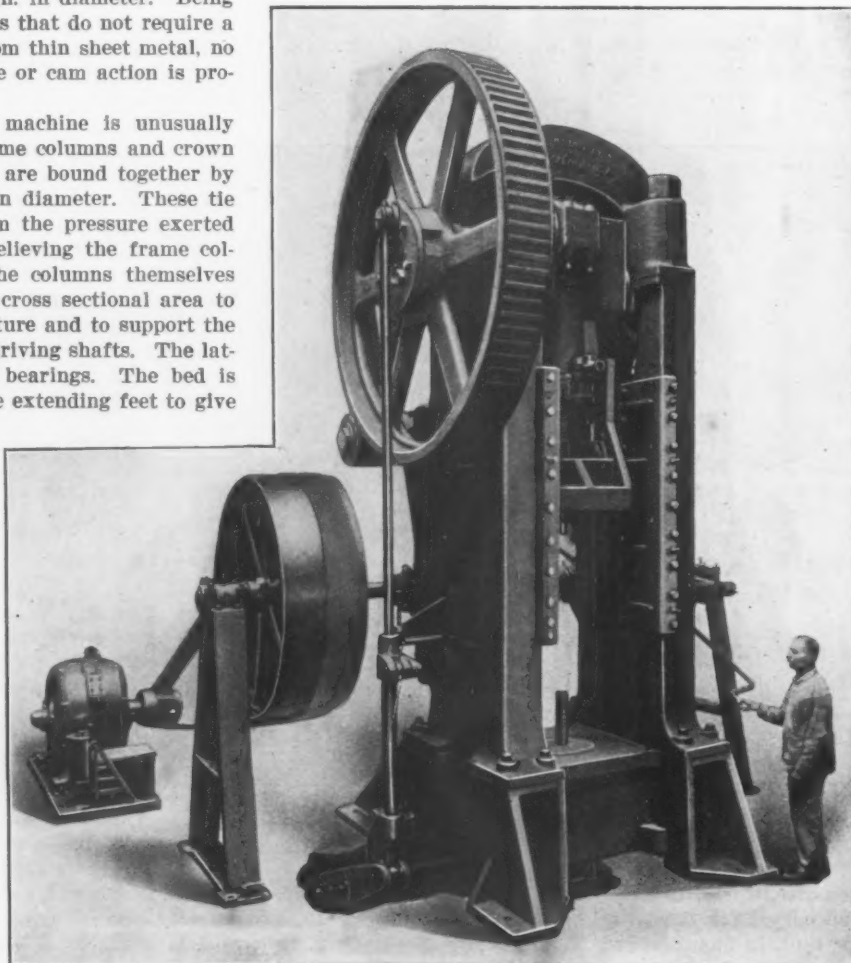
## A Huge Bliss Single Crank Press.

One of the largest and most powerful single crank power presses ever built has recently been designed and constructed by the E. W. Bliss Company, 11 Adams street, Brooklyn, N. Y. An appreciation of its size may be had from the illustration in which a man of ordinary height is shown beside it with his hand on the controlling lever. The total height of the press above the floor line is 16 ft. 7 in., and it extends  $2\frac{1}{2}$  ft. below the floor; the floor space occupied is 10 ft. 2 in. by 14 ft.  $8\frac{1}{2}$  in.; the total weight is 75,000 lb., and it is capable of exerting a working pressure of 500 tons. The press is adapted for a wide range of work, such as heavy blanking, trimming and shearing, and the drawing cold from heavy sheet steel, such articles as automobile hubs, cream separator bowls and deep drawn seamless steel shells. Blanks may be so drawn  $\frac{3}{8}$  in. thick by 18 in. in diameter,  $\frac{1}{4}$  in. thick by 30 in. in diameter, or 3-16 in. thick by 35 in. in diameter. Being intended for manufacturing articles that do not require a blank holder, as when drawing from thin sheet metal, no blank holder with attendant toggle or cam action is provided.

In all of its proportions the machine is unusually strong and massive. The bed, frame columns and crown piece are of special cast iron, and are bound together by four vertical tie rods, each 6 in. in diameter. These tie rods receive all of the strain from the pressure exerted when the press is in operation, relieving the frame columns of all working tension. The columns themselves are of cored box section of large cross sectional area to impart rigidity to the entire structure and to support the bearings of the back gearing and driving shafts. The latter shaft also has two outboard bearings. The bed is also of cored section, and has wide extending feet to give an area of base ample for the stability of a machine of its height. Between the bed and the crown piece the columns are clamped by the tie rods passing through them, to form the two housings, the distance between which is 37 in. Auxiliary bolts secure the ends of the columns from displacement, so that the whole forms an exceedingly stiff frame. The crown piece is solid and carries the bearings of the crank shaft, which are so arranged that the shaft can be removed without disturbing the crown piece. The main shaft is of high carbon open hearth steel, and the pitman is of cast steel, and is provided with a 6-in. diameter forged steel adjusting screw operated from the front of the press by a ratchet motion, and giving a slide adjustment of 8 in.

As the illustration shows the press is double geared and is driven from an extra large and wide faced driving pulley which serves also as a flywheel. The total ratio of the gearing is 58 to 1. All of the gears and pinions are of steel, and the large gear and its driving pinion have specially designed short shrouded teeth, affording great strength without an undesirably large pitch. The press is started and stopped by a single hand lever, which operates a very powerful friction clutch and brake, and the slide can be stopped at any point up or down in its 24-in. stroke. This combined clutch and brake is of a type that has been used on toggle drawing presses and other machines built by the company, and is mounted on the driving shaft at the rear where it does not show in the illustration. The shaft runs continuously, but the pinion which transmits its drive is loose on the shaft, except when it is connected to it by the clutch. When idle the pinion is held against rotating by the brake. To one side of the pinion is fixed a wide disk 34 in. in diameter on the outer periphery of which the brake shoes act. Flexi-

bly attached to the face of the disk is a steel ring that is gripped or released on its opposite faces by hardwood lined clutch members, which revolve with the shaft. One of these members forms part of a hub keyed to the driving shaft, and the two members are connected together by powerful toggles that cause them to revolve in unison and to grip or release by means of a shifting collar on the shaft actuated by the hand lever, which extends to the front of the machine. The toggles are adjustable to compensate for wear of the wooden gripping blocks of the clutch. The brake consists of two curved arms partly encircling the disk attached to the pinion, and carrying hardwood lined shoes at opposite sides of the disk. These arms are actuated by the conical end of a sliding bar, motion of which in one direction causes the brake shoes to press against the disk and in the opposite direction releases the shoes. This bar is actuated by the same lever as the clutch toggles, so that when the clutch is



A 500-Ton Single Crank Power Press Built by the E. W. Bliss Company, Brooklyn, N. Y.

thrown out the brake is applied and vice versa. Adjustment is also provided to compensate for wear of the brake shoes. The pinion and attached disk are bushed with composition and are well provided for lubrication.

The bed of the machine has a circular opening 12 in. in diameter and a bored recess 16 in. in diameter into which a heavy plate is inserted when it is preferable to dispense with the opening in the bed. A powerful knockout is provided, easily capable of adjustment for various lifts, or of being rendered inoperative when its use is not required. The parts of the knockout beneath the bed may be readily removed to make way for shells that it may be desirable to pass through the bed instead of extracting from above. At the left of the engraving may be seen the mechanism that operates the knockout. It consists of a connecting rod, which imparts motion from the end of the crank shaft to a rock shaft underneath the press. The connecting rod is in two parts, the upper one being a solid stem, and the lower one a sleeve into which the upper part fits. Upward movement of the con-

necting rod imparts upward movement to the knockout bar, and the amount of upward movement is varied by means of a latch in the sleeve, which is thrown out at any point in the lift by an adjustable set screw in an adjacent bracket. The rock shaft underneath, with its levers, &c., is balanced by a counterweight not shown in the illustration.

Special attention has been given to the design of the guides for the slide or mandrel of the press. The slide remains within the length of the guides at all adjustments, and at all positions of the stroke. In back the guides are cast on the frame columns, and have square surfaces, while in front they consist of adjustable gibs having surfaces at an angle of 45 degrees to give adjustment in two directions. The gibs are adjustable at the front of the press columns, although the guiding surfaces are at some distance back, or near the center of the press. The weight of these large gibs is carried independently of the adjusting screws so as to prevent sagging during the making of an adjustment.

### Iron and Machinery Trade with the Philippines.

WASHINGTON, D. C., November 26, 1907.—The commerce of the Philippine Islands in the fiscal year 1907 made the most favorable showing recorded since the archipelago came into the possession of the United States. A statement just compiled by the Bureau of Insular Affairs shows exports for the year amounting to \$33,713,357, breaking all previous records in the history of the islands. With imports valued at \$28,785,855, the balance of trade in favor of the islands was nearly \$5,000,000.

The import trade of the islands, while less than in 1905 and 1902, makes a more creditable showing than in either year, for the reason that the larger figures were coincident with very heavy imports of rice, which local production is now steadily displacing. Eliminating this abnormal element from consideration, it is apparent that the purchasing power of the islands has increased, and that the people are benefiting to the extent of the net decline in importations. The high total reached by the export trade in 1907 is more than \$500,000 in excess of any previous fiscal year, and is \$1,796,223 in advance of the export total of 1906. The figures for the foreign trade during the fiscal year, therefore, show, from the standpoint alike of imports and exports, not only a recovery from the reduced totals of 1906, but also a favorable comparison with earlier years.

In the iron and steel trade an increase in imports of about \$750,000 is noted. While this sum is distributed throughout a number of schedules, locomotives, steel rails, sheets and plates, structural materials and pipes and fittings show the largest gains. Seventy-five per cent. of the islands' purchases of iron and steel are from the United States and the United Kingdom, but American products in this schedule lost their foremost place in 1907, which was usurped by British wares.

#### Duty-Free Railroad Materials.

Under the act of Congress of February 6, 1905, the Philippine government was authorized to permit the free entry of railroad construction and equipment supplies in connection with the establishment of a railroad system for the islands under governmental guaranty. With the granting of franchises to the Manila Railroad Company and the Philippine Railway Company this privilege became operative about the beginning of the fiscal period under consideration. These imports were of little importance prior to January, 1907, but have increased in succeeding months, amounting to \$879,759 for the year, and are expected to reach considerable proportions in the next few years in which the lines contracted for must be completed. In view of the exceptional character of these imports, destined to assume large proportions—but for only a short period—their inclusion would seriously inflate the normal trade figures, and they are therefore excluded from the ordinary commercial returns, as has been the usage with government free entries.

The United States is the foremost contributor of these duty free railroad materials, and during 1907 supplied \$508,524 worth, while the United Kingdom occupied the

second rank with \$187,712. Australasia stood third with \$141,736, but this was chiefly in the form of lumber. Hong Kong furnished miscellaneous railroad materials to the value of \$41,119, while Germany, France, Switzerland, Japan and the British East Indies supplied relatively small amounts of a great variety of articles.

#### Imports of Iron and Machinery.

The following table shows the total imports in 1907 of iron and steel and metal manufactures, together with the share furnished by the United States:

	Total imports.	From United States.
Pig iron.....	\$16,153	.....
Bar iron.....	43,984	\$2,913
Bars and rods of steel.....	42,808	8,814
Hoops, bands and scroll.....	253	.....
Rails for railroads.....	129,264	31,781
Iron sheets and plates.....	313,896	39,940
Steel sheets and plates.....	138,242	112,875
Structural iron and steel.....	125,362	82,984
Wire and wire cables.....	46,435	22,566
Builders' hardware.....	39,701	16,825
Saws.....	2,357	1,291
Tools.....	108,783	45,708
Car wheels.....	4,223	1,816
Castings.....	72,120	17,422
Table cutlery.....	6,788	518
Other cutlery.....	63,378	11,505
Needles, pins, pens, hooks and surgical instruments.....	26,354	6,617
Other fine articles of iron and steel....	2,554	930
Firearms.....	10,179	6,495
Cash registers.....	494	494
Electrical machinery.....	73,536	65,985
Printing presses.....	1,416	232
Pumps and pumping machinery.....	14,419	12,300
Sewing machines.....	66,859	14,803
Boilers and parts of engines.....	51,644	19,212
Locomotives.....	113,983	994
Stationary engines.....	40,139	15,559
Typewriters.....	43,334	39,014
Sugar and brandy machinery.....	3,704	.....
Other machines and apparatus.....	220,226	110,703
Detached parts of machinery and machines.....	169,209	39,874
Cut nails and spikes.....	4,071	1,405
Wire nails.....	60,480	36,388
Other nails and tacks.....	29,951	11,655
Pipes and fittings.....	119,645	20,840
Safts.....	6,088	3,523
Scales and balances.....	6,999	5,019
Stoves, ranges and parts of.....	5,032	3,466
All other manufactures of iron and steel.....	320,989	51,860
Pig and bar lead.....	7,479	220
Lead pipe.....	566	454
Tin plate.....	12,041	1,649
Tin manufactures.....	45,736	5,349
Zinc and manufactures.....	16,440	506

#### Gains Over 1906.

As compared with the figures for the fiscal year 1906, the most notable increases in the total imports of 1907 were approximately as follows: Steel rails, \$118,000; iron sheets and plates, \$32,000; steel sheets and plates, \$123,000; structural iron and steel, \$40,000; wire and wire cables, \$15,000; builders' hardware, \$25,000; tools, \$20,000; cutlery, \$12,000; sewing machines, \$20,000; locomotives, \$97,000; typewriters, \$14,000; detached parts of machinery and machines, \$100,000; wire nails, \$36,000; iron and steel pipes and fittings, \$70,000; miscellaneous iron and steel manufactures, \$45,000.

W. L. C.

**A Roll Record Card.**—The Mesta Machine Company, Pittsburgh, Pa., is sending out to rolling mills and steel works a very complete roll record card which is ruled and properly headed, so that when filled out it should show the complete history of the roll. Upon the reverse side of the card is shown a view of the roll finishing department in the company's great plant at West Homestead, Pa.

The Chicago Screw Company has moved its offices from the former location at 2 North Canal street to its new office building, adjoining the plant at Filmore and Homan avenues, Chicago. The downtown warerooms, now at 2 North Canal street, will after January 1 be located at 49-51 South Clinton street. Extensive improvements have been made to the plant, whereby its capacity has been increased 50 per cent.

### The Proposed New Rail Sections.

The American Railway Association has published the new rail specifications proposed by its Committee on Standard Rail and Wheel Sections in its report to the association's convention of October 31 in New York. The new sections are presented as Series A and Series B, each series consisting of five sections, namely, for 60-lb., 70-lb., 80-lb., 90-lb., and 100-lb. rails. Since the 80-lb. rail is in very general use, we compare the two series of sections by presenting that which is recommended in each for rails weighing 80 lb. to the yard. Fig. 1 represents the 80-lb. rail of Series A, the dimensions of which are indicated. Other details are as follows:

Area of head.....	3.05 sq. in.	38.8 per cent.
Area of web.....	1.65 sq. in.	21.0 per cent.
Area of base.....	3.16 sq. in.	40.2 per cent.
Totals.....	7.86 sq. in.	100.0 per cent.
Moment of inertia.....	28.80	
Section of modulus, head.....	10.24	
Section of modulus, base.....	12.46	
Ratio periphery head to area head.....	1.93	
Ratio periphery web to area web.....	3.57	
Ratio periphery base to area base.....	2.52	
Ratio total periphery to total area.....	2.50	

For the 80-lb. rail of Series B, shown in Fig. 2, the details are as follows:

Area of head.....	3.07 sq. in.	38.8 per cent.
Area of web.....	1.54 sq. in.	19.5 per cent.
Area of base.....	3.30 sq. in.	41.7 per cent.
Totals.....	7.91 sq. in.	100.0 per cent.
Moment of inertia.....	25.1	
Section of modulus, head.....	9.38	
Section of modulus, base.....	11.08	
Ratio periphery head to area head.....	1.79	
Ratio periphery web to area web.....	3.57	
Ratio periphery base to area base.....	2.72	
Ratio total periphery to total area.....	2.53	

One of the prime objects in the newly designed sections is to put more metal in the base than is provided

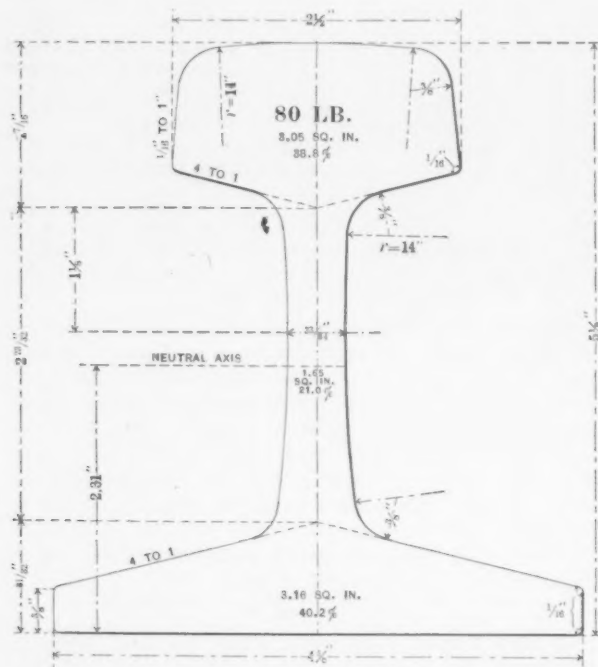


Fig. 1.—80-Lb. Rail of Series A, in Which a Stiff Girder Is Aimed at—A Modification of the Dudley Section.

in the commonly accepted Civil Engineers' sections, the aim being to give nearly equal distribution of metal between the base and the head, so that rolling can be done at lower temperatures than are now usual. The new sections differ from those in use chiefly in giving somewhat more metal in the base than in the head.

The American Railway Association's committee was a unit in preferring the Series A sections to those of Series B. In the design of the former emphasis was put on the function of the rail as a girder and its ability to distribute the load over a number of supports. It was argued that to do this it must be stiff and therefore

deep. The Series A sections have high moments of inertia and are stiffer than those of Section B, admitting also of stiffer splice bars. They were recommended, therefore, as making possible a smoother track than could be had with rails designed according to Series B. The new sections are submitted to the membership of the American Railway Association for discussion. No action will be taken upon them until the meeting of the association in April next year. Meantime it is probable that

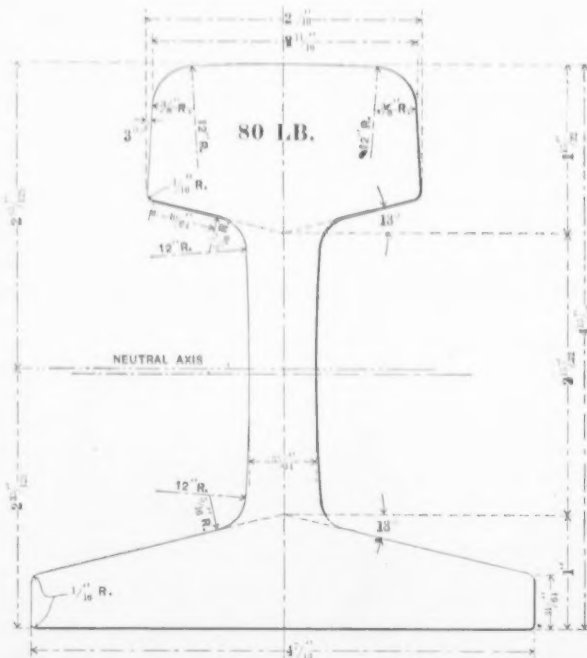


Fig. 2.—80-Lb. Rail of Series B—A Modification of the A. S. C. E. Section.

together with the sections recommended by the committee of the American Society of Civil Engineers at its meeting in Mexico last summer, they will have attention at the January meeting of the latter organization in New York.

Referring to the proposed new sections, the *Railroad Gazette* says that Series A is a modification of the Dudley section, used on the New York Central Railroad, while Series B is a redesigned American Society of Civil Engineers section. "In the Series A section metal has been taken from the sides and bottom of the head of the Dudley section and added to the top of the base. The web has been thickened 1-64 in., but otherwise no change has been made. P. H. Dudley has long been an advocate of a rail section designed as a stiff girder, and approximately the same vertical strength has been retained in the Series A section, with some sacrifice in the amount of metal which can be worn off of the head. The Series B section has a slightly better distribution of metal than the Series A section. It meets the requirements where the wear of metal in the rail head is a matter of more serious consideration than additional strength as a beam. No sacrifice in the depth of the head has been made over the A. S. C. E. section, and only a small decrease has been made in the width of the head. Such metal as has been taken from the head has been added to the thickness of the base, which is also increased by reducing the width of the base from 5 3/4 to 5 1/2 in. in the 100-lb. section. The stiffness has been reduced also from a moment of inertia of 44.4 to a moment of 41.3, or 7 per cent."

George Nash & Co., New York and Chicago, importers of and dealers in iron and steel and high grade steel specialties, heretofore at 24 South Clinton street, Chicago, have completed a building at 115 West Washington street, which they now occupy. The building was especially designed for the firm's requirements, and will enable it to carry increased stocks, to facilitate the forwarding of orders for prompt shipment.



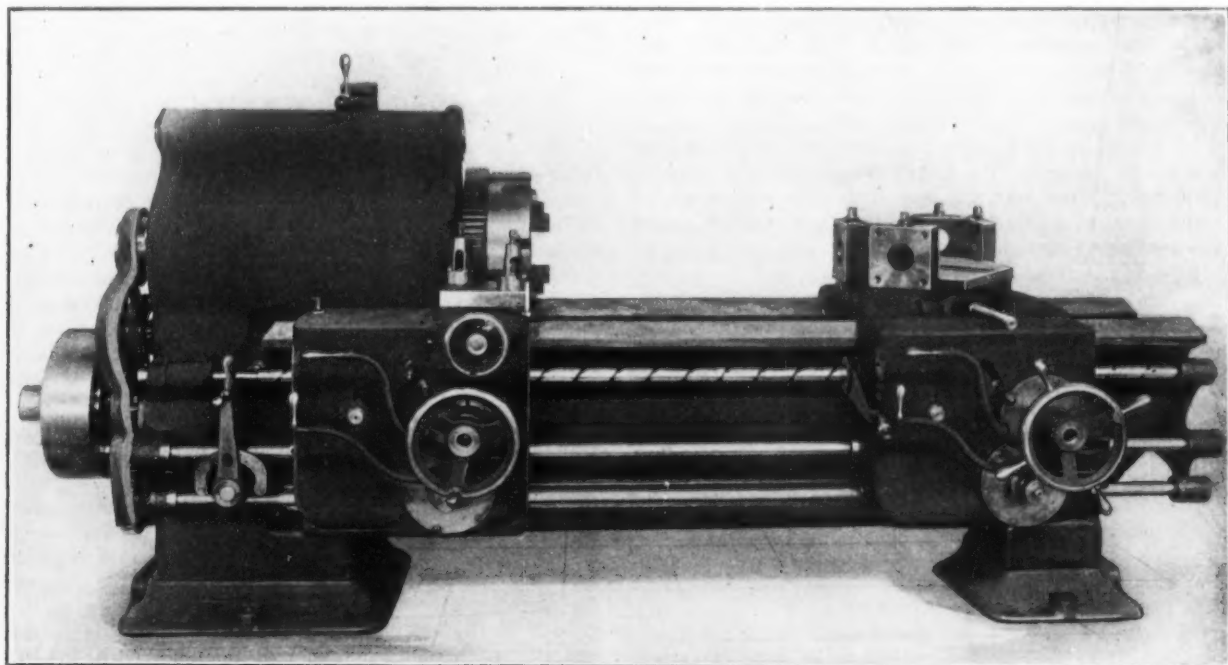
### The Steidle Heavy Turret Lathe.

The heavy turret lathe is now considered the standard tool for duplicate operations of turning, boring, facing and thread cutting, on steel or iron castings or forgings, and the two carriage type is generally preferred because of its greater capabilities. The greatest objection to this latter form has been the excessive overhang of turret tools necessary to reach over the tool carriage and the consequent vibration. This objectionable feature, vibration of long overhanging tools, is overcome in the new full swing side carriage turret lathe, which has been brought out by the Steidle Turret Machine Company, Madison, Wis. It derives its name from the novel construction of the tool post carriage, which gives greatly increased capacity with a nominal swing of lathe and allows the side carriage to be run past the front part of the chuck, out of the way of the turret, in which position it is shown in accompanying engraving. With the carriage in this position, the turret slide can be brought directly up to the chuck or work.

All parts are made sufficiently strong and rigid to ob-

requirements, is claimed to combine the qualities of rigidity, accuracy and convenience to a remarkable degree. The rigidity of the combined bed and head stock, already referred to, is approached in the construction of the two carriages. They rest on Vs of unusually heavy construction, having a wearing surface 2 in. wide on each face of the V—an equivalent of 8 in. of flat surface for the Vs on which the turret slide rests. The distance between Vs is ample to allow the chuck to hang well between them, bringing the center of gravity low and adding to the stiffness of the structure.

The turret and slide are massive. The turret is hexagonal in form, with four sides containing bored center holes and finished clamping surfaces for holding boring bars, &c., while the remaining two sides are open to receive universal facing heads for holding any form of facing and turning cutter. The turret is equipped with a rotating stop bar, with a dead stop for each face, enabling the production of work in duplicate lengths. To relieve the operator of the usual laborious hand work in operating the carriage and turret slides, both are equipped with rapid power moving devices, controlled by convenient



The New Full Swing Side Carriage Turret Lathe Built by the Steidle Turret Machine Company, Madison, Wis.

tain the maximum efficiency from high speed steel tools by employing the proper cutting speeds. The one piece bed and housing, obviating the necessity of bolted parts, makes a solid construction to withstand the strain occasioned by the use of multiple broad shaving cutters fastened to the turret. The head stock completely incloses the all gear drive, which is placed underneath the spindle, thereby bringing the driving shaft as close to the base of the machine as possible, decreasing the tendency to vibrate which exists when the drive is at the top of the machine. Thirty changes of spindle speed are possible through the gear mechanism, which is arranged in three driving ratios of 10 speeds each, varying in geometrical progression, the maximum gear ratio being 80 to 1, which insures ample driving power at the proper speeds for all work.

Power is taken directly from the line shaft to a constant speed belt pulley, with a friction control and a reversing motion. It affords a convenient means of starting and stopping the lathe quickly, besides allowing the head stock speed changes to be made under motion. All changes are controlled by conveniently located levers, which are interlocking to prevent accident through carelessness of the operator. When desired, the lathe is equipped with motor drive, for which any constant speed motor can be used.

The lathe being designed to meet the severe modern

levers located on the carriage aprons, thus giving perfect control in bringing the tools rapidly to and from the work. Both carriages are screw cutting, are arranged with eight reversible feeds each, and are capable of being fed in like or opposite directions at different speeds.

The tool post carriage has power cross feed in the same ratio as the longitudinal feeds, and is fitted with a turret tool post with facilities for holding four standard tool post tools or flat cutters. A standard set of tools, with universal facing heads, suitable for the general run of work, or special tools for more intricate work are furnished, if desired.

The lathe has a swing of 22 in. over the Vs and 18 in. over the carriage. The spindle has a through hole  $3\frac{1}{2}$  in. in diameter and is  $6\frac{1}{8}$  in. in diameter at the front bearing. The turret is 20 in. in diameter across the flats; has 3-in. diameter holes for receiving tools and has a traverse of 52 in. from the face of the chuck. The driving pulley is 18 in. in diameter, takes a 5-in. belt and should run at 360 rev. per min. The lathe is fitted with an extra heavy three jawed universal chuck and weighs complete 8000 lb.

The new furnace of the Hamilton Steel & Iron Company, Hamilton, Ontario, which went into blast on November 8, was built under the design of Frank C. Roberts & Co., Philadelphia, Pa.

## Manganese Ore Production in 1906.

WASHINGTON, D. C., November 25, 1907.—The year 1906 witnessed a marked revival of the American manganese industry, the output exceeding that of 1905, 1904 and 1903, and closely approaching the production of 1902, according to the annual report of the United States Geological Survey, which has just been completed by Edwin C. Eckel. The temporary revival of the industry was marked by increased interest in prospecting and opening up new manganese properties and in reopening old mines. It was also, unfortunately, accompanied by the exploitation of many manganese mining companies of doubtful character.

The manganese industry of the United States has never been established on a sound basis. Even during the period of greatest production not more than two or three manganese mines were operated in business-like fashion. The bulk of the product has come from small workings, operated irregularly and inefficiently by individuals with little technical ability. Manganese deposits as a rule are very irregular in form, and are likely to show very rapid variations in grade of ore. It is consequently difficult to work them efficiently on a small scale, for, in order to be able to ship high grade ore steadily a good concentrating plant is necessary, and such a plant cannot be built or operated simply to handle the output from one or two small pits.

The ores included under this head are relatively pure manganese ores, carrying 40 per cent. or more of metallic manganese. Ores carrying less than this percentage of manganese, with relatively high iron, are reported under the heading of manganiferous iron ore.

### Production.

In 1906 the production of manganese ores amounted to 6921 gross tons, valued at \$88,132, an increase of 2803 tons, or 68.1 per cent., in quantity, and of \$51,918, or 143.4 per cent. in value over the production of 1905, which was 4118 gross tons, valued at \$36,214. All of this increase came from Virginia and Utah, for no other States produced any notable quantity of manganese in 1906. The production of manganese ores by States in 1905 and 1906 was as follows:

1905.—Virginia, 3947 tons, valued at \$35,209; Georgia, 150 tons, valued at \$900; Tennessee, 20 tons, valued at \$100; and California, 1 ton, valued at \$5. Total, 4118 tons, valued at \$36,214, or an average of \$8.80 per ton.

1906.—Virginia, 6028 tons, valued at \$77,522; Utah, 800 tons, valued at \$10,000; Arkansas, 62 tons, valued at \$290; California, 1 ton, valued at \$20. Total, 6921 tons, valued at \$88,132, an average of \$12.73 per ton.

The principal uses of manganese ores are metallurgical, in connection chiefly with the iron and steel industries, and chemical in connection with the manufacture of chlorine, oxygen, potassium permanganate, &c. When manganese ores are used for metallurgical purposes their value depends upon (a) the percentage of metallic manganese present in the ore, and (b) the relative absence of such undesirable elements as phosphorus, sulphur, &c. The ores used in the chemical industries are valued on an entirely different basis, for here the chief use for manganese ore is as a supplier of oxygen, and the value of the ore depends upon the percentage of manganese peroxide present in the ore. The result of this difference in utilization is that many ores suitable for metallurgical purposes are absolutely worthless in the chemical industries.

The ruling prices for manganese ores during 1906, as established by the Carnegie Steel Company, were given in *The Iron Age* of March 8, 1906, page 875. For ore containing over 49 per cent. metallic manganese 30 cents a unit was paid and 6 cents per unit of iron, these prices being based on ores containing not more than 8 per cent. silica and not more than 0.25 per cent. phosphorus, deductions being made for excess percentages. These prices covered only the ores used in the steel industry. Manganese ores for chemical uses are valued on an entirely different basis.

### Manganiferous Iron Ores.

In addition to the output of relatively high grade manganese ores there is in Arkansas and Colorado a very important production of iron ores carrying 20 to 40 per cent. of manganese. These ores have hitherto been reported among the iron ores, though their output was repeated under manganese. As this method of procedure seems likely to cause confusion, the output of highly manganiferous iron ores for 1906 is reported in this place only. Ores of this class amounted to 41,300 gross tons, valued at \$122,400, in 1906, as compared with 49,158 tons, valued at \$117,139, in 1905 and 17,674 tons, valued at \$55,304, in 1904. In 1906 Colorado furnished 32,400 tons of this product, while Arkansas was credited with 8900 tons.

A large proportion of the iron ores of the Lake Superior District carry sufficient manganese to be notable, but as the output of these ores has been included in the iron ore report, it is not reported separately here. These Lake Superior ores carry from 1 to 8 per cent. manganese, and cannot therefore be grouped satisfactorily with either the pure manganese ores or with the highly manganiferous iron ores of Arkansas and Colorado. A fair assumption would be that in 1906 the Lake Superior District produced about 1,000,000 long tons of this very low manganese iron ore, and that its average manganese content was about 4 per cent.

### Manganiferous Zinc Residuum.

In addition to the manganese ores and manganiferous iron ores, an important source of manganese in recent years has been the residual product from certain zinc oxide works using New Jersey ores. The crude ore as shipped to the zinc oxide plant consists of a mixture of franklinite and willemite, the former being predominant. After roasting off the bulk of the zinc the residue is a mass of manganese and iron oxides. The production of this manganiferous residuum in 1906 was 93,461 tons, as compared with 90,289 tons in 1905 and 68,189 tons in 1904.

The quantity of manganese ores imported into the United States in 1906 amounted to 221,260 gross tons, valued at \$1,696,043, which is a decrease compared with the 1905 imports, although a substantial increase over 1904. The comparatively small domestic production of manganese ore makes the importation of this product into this country a most important factor, as the demand for ferromanganese and spiegeleisen increases with the growth of the steel industry. India easily leads in the quantity of manganese exported in 1906, with 154,180 gross tons, valued at \$939,984, as compared with 101,030 tons, valued at \$501,423, in 1905, and 10,200 tons, valued at \$58,635, in 1904. Brazil ranks second, and Russia, Cuba, Germany, Japan, Belgium, United Kingdom and Canada follow in the order named.

### Ferromanganese and Spiegeleisen.

The production of ferromanganese and spiegeleisen in the United States in 1906 amounted to 300,500 gross tons, as compared with 289,983 tons in 1905. There has been a steady increase in the output of these products since 1893, when the production was only 81,118 tons. The import movement of ferromanganese and spiegeleisen has been marked by extraordinary fluctuations. In 1903 the imports amounted to 163,534 gross tons, but in the following year only 26,436 tons were imported. In 1905 the total was 108,298 tons and in 1906 it rose to 187,627 tons. There has also been a marked increase in value in the last two years, the imports in 1906 averaging nearly \$40 per ton.

W. L. C.

William G. Coxe, president of the Harlan & Hollingsworth Company, Wilmington, Del., stated in a recent interview that during the past two years the company has expended about \$600,000 in rehabilitating the plant, including \$45,000 for the construction of a new dry dock. Regarding the building of cars, the company has now in contemplation the tearing down of two of the present buildings and the erection of a large car building shop which will accommodate 60 cars at one time.



### A 2-Ton 60-Inch Chuck.

The Union Mfg. Company, New Britain, Conn., has just completed a boring mill chuck of such unusual size as to deserve special mention. It is 5 ft. in diameter, and is shown in the illustration compared with the height of its inventor and designer, John W. Carleton, the company's superintendent. It is of the universal scroll type with sliding jaws which may be moved independently as well, since the jaws can be loosened from the adjusting



A 5-Ft. Boring Mill Chuck Made by the Union Mfg. Company, New Britain, Conn.

slides, and quickly set at equal or different distances from the center. The jaws may be retracted or removed entirely to allow work to be bolted directly to the plate. The chuck is very heavy, weighing a trifle under 2 tons. It is designed principally for use on boring and turning mills, in place of the ordinary table.

The company manufactures this chuck in a variety of sizes, namely, 18, 21, 24, 30, 32, 34, 37, 42, 51 and 60 in. The demand is greatest for the medium sizes, but there is a growing demand for the large chucks, because users of boring mills are finding it advantageous to employ a universal chuck for holding regular pieces of work.

### Industrial Education.

#### A Cleveland Plan.

A plan to provide industrial education for men in the machine and electrical trades in Cleveland is being proposed by the local branch of the Young Men's Christian Association, and will doubtless be carried out if sufficient co-operation is offered by manufacturers. To increase the skill of men in various industries practical courses are contemplated for them in machine and electrical shops and in charge of steam plants. For men in machine shops it is designed to offer instruction in machine shop work under the supervision of a practical man from one of the local shops.

For this purpose it is proposed to equip a students' shop with lathes, milling machines, shapers, planers, drill presses and other machine tools, and proprietors of shops are asked to aid in the movement by giving or loaning tools or making contributions of money. It is planned to give most of the instruction in the evening, so that it will not interfere with regular work. As far as practical the scheme is to make these technical courses supplement the apprentice system in operation in the machine shops. In connection with the work in the machine shop practical instruction will be given in mechanical drawing, shop mathematics and practical mechanics, with the view of teaching the workmen to make sketches of machine

parts, to solve practical shop problems and to make estimates.

#### The Albany Method.

Industrial education in the elementary schools, with an eye to preparation for the industrial trades, has been adopted as a policy by the educational authorities of the city of Albany, N. Y., which is said to be the first city in this country to take this step. The Board of Education has committed itself to the idea, and the Board of Estimate has allowed an initial appropriation with which to make a beginning in one school. The plan is to establish eventually several elementary industrial schools in various parts of the city, with an industrial high school to crown the system.

Manual training has had a place in the Albany schools for some years. The new plan is far more fundamental and far-reaching, and may be described as "manual training with an avocational purpose." While shop work for boys and the domestic arts for girls will constitute the first industrial courses to be introduced, these are regarded as only the first steps in a comprehensive programme, covering all of the leading industries of the locality.

### The Gray and Prior Soda Kettle.

The illustration shows a very convenient form of soda kettle, designed and manufactured by the Gray & Prior Machine Company, Hartford, Conn. Unlike the usual shop kettle, it is heated by a Bunsen gas burner or blue flame kerosene burner instead of a steam heated jacket. This feature makes the kettle available for use in shops and automobile garages, where a supply of live steam cannot be obtained for heating a steam jacketed kettle. Incidentally the use of a steam trap and permanent steam



A New Gas or Oil Heated Soda Kettle Manufactured by the Gray & Prior Machine Company, Hartford, Conn.

pipe connections is done away with and the kettle is therefore portable. These kettles were originally designed for use in the company's own factory, but have proved so useful and handy that the company has now decided to place them on the market.

The steamer John Dunn, Jr., was launched November 19 at the yard of the Toledo Shipbuilding Company, Toledo, Ohio. It is 520 ft. over all, and has a capacity of 10,000 tons.



# THE IRON AGE

Established in 1855.

New York, Thursday, November 28, 1907.

Entered at the New York Post Office, as Second Class Mail Matter.

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						HARDWARE EDITOR.

## Contrasts of 1893 and 1907.

The contrasts between industrial conditions in the United States to-day and those that attended the panic of 1893 are many. They are so many, in fact, as to cause wonder that the happenings of the past six weeks should have prompted such frequent reference to that period. The chief reason for these comparisons is obviously in the fact that then as now the banks were the storm centers. But here also the differences are pronounced. To-day, the bank troubles have had their origin largely within the institutions themselves; in 1893, the banks, while their hands were not all clean, were for the most part imperiled from without. Moreover, while but few banks have been seriously involved in recent weeks, in 1893 no less than 549 banks and mortgage loan institutions closed their doors in the first eight months, nearly all these failures coming in May, June, July and August.

Without attempting to catalogue all the causes of the panic of 1893 and the depression that followed, its chief factors may be recalled. There were, to begin with, the trailing effects of the Baring failure of November, 1890. Foremost of the direct causes of the panic was the fear that the parity of gold and silver could not be maintained. But added to this was a troop of financial and industrial evils: Railroad receiverships right and left, in part the fruit of hostile railroad legislation; the collapse of numerous real estate booms; the breaking down of an overstrained system of credit—a culmination of the bad business methods of years; large crops abroad and little demand for American wheat. In the iron trade special causes added their weight to the load pressing upon all industry. These were the heavy shipments of iron ore from the newly opened Mesaba range, at prices seriously menacing operations on the old ranges; destructive competition in the coke industry, forcing prices far below cost; fresh competition from large and modern iron and steel plants completed in 1892 and 1893; and the announcement by the party in power that important reductions would be made in the tariff schedules for iron and steel. Orders for iron and steel practically stopped. Currency could not be had from the banks. High grade commercial paper could not be discounted; collections could not be made, and there was widespread distrust of the future. The average reduction in wages in the iron industry in 1893 was 25 per cent., and the year recorded over 100 financial failures among iron and steel manufacturers and merchants and iron ore producers.

The mere mention of these outstanding features of the distress of 1893, that dragged on into the years following, emphasizes the contrasts with the conditions of to-

day. In the iron trade the one fact iterated and reiterated in the market reviews of that period was the disappearance of profits to all engaged in the industry, from the mining of ore to the final refinements of the mills. To-day no such condition exists and no such condition threatens.

What is most striking among the changes that have come over the iron trade since 1893 is the progress away from destructive competition. It is usual to say that this development dates from the formation of the large consolidations in the period from 1899 to 1901 and is due to the concentration of iron and steel production in few hands. This may be the largest reason, but there are indications, apart from the passing of so much of the iron and steel capacity of the country under strong control, that the spirit of co-operation has grown in all departments of business since the trying times of 1893. For one thing, there is better co-operation in the handling of the banking situation to-day than was seen 14 years ago. Doubtless the firm establishment of the business of the country on a gold basis has aided in creating a sounder sentiment in respect to the slaughter of values, as it has facilitated the correction of credit evils. The interval in question has also witnessed the gathering together of competing interests in all lines in trade associations. This has resulted in a better understanding throughout all trades of the conditions under which business may safely be done. As manufacturing and commercial operations have become more highly organized, the incompetent and unsuccessful have been weeded out and the gap between the costs of the most efficient and the least efficient has been narrowed.

In the steel trade the situation of 1907 has already brought the heads of important companies together in conference. Such a thing would scarcely have been considered a possibility in 1893. Then "any price to get the order" became the slogan of the largest interest, and tonnage was insistently demanded of every member of the selling organization. In sharp contrast is the spirit of 1907 that would adjust operations to the actual requirements of the country, expecting every producer to make some sacrifice for the general good. It need not be pointed out which method of meeting a critical situation is the more scientific or more conducive to quick recovery.

## Curbing Extortionate Accident Claims.

A law has gone into effect in Massachusetts which aims to discourage the practice of a certain class of lawyers of soliciting cases from victims of accidents, especially where claims against employers and others have little real standing in law, or are grossly exaggerated. The law is not a drastic one. The penalty imposed is not severe, but it is a step in the right direction, for a beginning on the statute books is always important in establishing adequate corrective laws, and the evil that it is proposed to alleviate is not only common, but is growing rapidly in its prevalence. Sterner measures will be necessary if the miscarriage of justice is not to extend to preposterous limits, a condition made possible by the inherent prejudice of juries against the defendant corporation or individual in favor of the prosecuting victim of an alleged avoidable accident.

The law, which is entitled "an act to prohibit the soliciting of employment by attorneys-at-law," provides that "no attorney-at-law shall through any runner, agent or person who is employed by him, solicit a person to employ him to present a claim for damages, or to prosecute an action to enforce such a claim, and no attorney-at-law shall directly or indirectly give or promise to give

to any physician or other person any money, fee, commission, profitable employment or other personal advantage in consideration of his employing such attorney on behalf of a person who has a claim for damages, or soliciting or procuring the person who has such claim to employ such attorney to present such claim or to prosecute an action for the enforcement thereof. No attorney shall appear in any suit for the enforcement of a claim in connection with which he has violated the provisions of this act." The penalty is: "If it shall at any time be made to appear to the satisfaction of the court that an attorney, whose appearance has been entered in any suit, has in connection therewith violated the provisions of this act, such attorney may in the discretion of the court be disqualified from further acting in said suit, and the court may make an order for continuance or for another and speedy trial, or such other order for the protection of the interests of the parties as justice may require, and may deny the right to collect costs wholly or in part to any party to the suit."

It has been suggested frequently that some adaptation of the old principle of champerty be applied as a remedy for the ambulance chasing practice, which has come to be a source of great expense to public service corporations and other employers of labor, especially those whose men work about machinery or in other environments where some degree of danger may exist unless due care be used. Champerty is defined as "the unlawful maintenance of a suit in consideration of some bargain to have part of the thing in dispute, or some profit out of it. The essential part of the offense is that the champertor is to carry on the party's suit at his own expense."

There is no dispute that champerty is a common practice. The attorney agrees to pay the necessary expenses incident to litigation and to give his own services, receiving no fee if the action is not maintained, but stipulating for himself a material share of a verdict or settlement if one is obtained. It is entirely a speculation, based upon a knowledge of the chances of success even in the face of an unjust cause. The client has little to lose if his case lacks merit; he can afford to share his gains under such conditions. But if his claim be just, and if his employer or a public service corporation or other party responsible to him refuse to give reasonable compensation, his connection with a lawyer of this class will be costly, for he will have to surrender a large share of what is his by right, paying for legal services a sum all out of proportion to their worth. The new Massachusetts law would serve to protect a litigant under these latter conditions, thus supplementing its usefulness in guarding the rights of defendants in unjust accident cases. He could easily be rid of the lawyer who would take from him an exorbitant sum, and the law of champerty would prevent the attorney from recovering such a fee, a fact little known, but nevertheless established by decisions of final courts of appeal everywhere, it being a recognized principle of the common law upon which the statutes of this country are based.

If the client agrees to pay the attorney a certain percentage of the verdict or settlement the latter cannot maintain an action against him in the attempt to get possession of the agreed amount, while on the other hand the client can recover from the attorney if the latter has collected the money for him and retains the share agreed upon as a contingent fee. Two Massachusetts Supreme Court decisions demonstrate the fact. One has it that "an agreement between attorney and his client that the former shall have for compensation a percentage on the money collected, and that if he does not recover the client

shall pay only his expenses, is champertous; and the attorney cannot maintain an action thereon." The second decision is that "where such an agreement was made to receive one-half of the sum collected, and nothing in case of failure, the client may maintain an action against the attorney for the whole amount collected, less costs paid by the attorney."

The new Massachusetts law gives full discretion to the court in the enforcement of the penalty of the act. Doubtless no judge would listen to the defendant's plea that an attorney be removed from a plaintiff's case if the contingent fee was accepted under conditions not to be impeached for their motive. There will be a natural tendency to discriminate in favor of the lawyer who agrees to take a reasonable fee in case the suit be successful and to render his services free of charge if an adverse verdict or decision be rendered, for the action may be entirely just, and without the assistance of counsel the victim of an accident might be helpless to recover that to which he is entitled by right. It is easy to imagine an instance where an attorney would be influenced by the highest of motives in committing champerty, and a strict enforcement of the law would be quixotic, but, on the other hand, in the cases of those lawyers who specialize on tort cases, procured through solicitation by themselves or their agents (runners being regularly employed for the purpose in the large cities), a rigid enforcement of laws intended to restrain them would serve the public good. In individual cases a word to the wise among employees would help to bring an end to the prosecutions of some particularly enterprising attorney of this type.

#### Move to Stop Machinery Cancellations.

The cancellation of contracts which is now afflicting the machinery trade of the country has brought up the question of whether it would be practicable to establish some form of contract with customers under which cancellations would not be permitted nor expected. It is said to be probable that the matter will be brought before the National Machine Tool Builders' Association at its next meeting, in the hope that something may be accomplished through concerted action that will rid the industry of one of its most unsettling influences. The contention is that the trade has now been brought together closely for the mutual welfare of its members, as has been demonstrated in various important ways, and that it is possible to-day to accomplish changes in practices which would have been out of the question a few years ago. No one alteration in conditions could be more important than to eliminate a custom that to all intents and purposes makes of an order a memorandum only, for the rule is established, excepting in the case of special machines, that the customer of the manufacturer or dealer, or the dealer as the customer of the manufacturer, has but to change his mind and send a letter or telegram that a machine is not required, and the order is stricken from the books without a protest.

The pig iron industry is cited to prove that a trade can enforce its contracts and still maintain the good will of its customers. The furnaces and their dealers are not accepting cancellations excepting in cases where the circumstances are unusual. They are importuned to do so by some buyers, but usually it is useless to make the attempt. The pig iron man maintains that the furnace bases its production upon business in hand, and that customers must realize this when they make their contracts. If a foundry buys when the price is low and the market goes up, the furnace must stand it. Therefore, it is no



more than fair for the customer to bear the burden if he buys at a high price and the market falls, even if the immediate need of the iron no longer exists.

In a general way the same argument could be made in the machine tool trade, though, of course, the case is less extreme. The machinery manufacturer produces on a rising market at high prices of labor and material. He bases his production to a large extent upon the orders on his books. If a customer orders a dozen lathes, for example, the manufacturer's deliveries must be put off to that extent for those buyers who come after. Doubtless business which would not have been canceled has been lost because orders, since canceled, forced deliveries so far into the future that would-be customers declined to buy. Under some conditions a machinery builder or dealer would have left on his hands tools manufactured at top prices that he might have to sell at lower figures later.

The argument for a strict adherence to contracts represented by orders is wholly logical. The problem is if it is practicable. The reason the custom has never been established is that machinery manufacturers and dealers have wished to retain the best will of their customers by protecting their interests. The real cause of the prevailing practice was, of course, competition, just as it used to be in the cutting of prices. Prices are now maintained very generally because the trade is established on a strong basis of mutual understanding.

It is improbable that the relations of manufacturer and dealer could be placed on a strict basis of no cancellation. The manufacturers realize that some curb should be put on the placing of stock orders when business is rushing, and that dealers should be held more rigidly to account when it comes to taking the left overs of such lots when the market breaks. But the machine tool builder can never lose sight of the fact that he is dependent upon his dealers for a large part of his business, and that he must regard them more or less in the light of commission houses and treat them accordingly. Doubtless the first step in the new movement would be to unite the manufacturer and dealer in a movement against cancellations by their customers. Both branches of the trade believe that many thousands of dollars would have been made of late months if a certain part of the business booked had been discouraged by a form of contract that would have meant no revoking of orders.

#### The New England Foundrymen's Association.

At the monthly meeting of the New England Foundrymen's Association, held at the Exchange Club, Boston, November 20, the report of the Weight Committee on shortages in shipments of pig iron and coke, read by Henry A. Carpenter, Providence, came in for the chief share of attention at the business session after dinner.

President W. H. Bense was in the chair, and in opening the meeting spoke encouragingly of the business situation. George H. Gibby read a brief paper, taking as his text the instructions of the United States Steel Corporation to its salesmen, that prices shall be maintained. Mr. Gibby urged the foundrymen to do likewise, pointing out the futility of attempting to better the condition of any one foundry by reducing prices, which would accomplish nothing but the general lowering of profits for every one without an increase in the volume of demand. Announcement was made of the details of the annual meeting in January. The meeting was enlivened by a musical entertainment.

The Rail Joint Company of New York, exclusive maker of base supporting rail joints, announces that its rail joints are now in use from ocean to ocean, the Panama Railroad being its latest equipment.

## CORRESPONDENCE.

### Business Letter Forms.

*To the Editor:* In perusing a recent issue of *The Iron Age* I have seen and studied your article entitled "A Unique Business Letter Form," giving the description of the system adopted for its correspondence by the Adams Company, Dubuque, Iowa. For some there may be an advantage in placing the name of the addressee and the address at the right of the letter, directly under the date, instead of the left, but for one using the vertical system of filing letters I fail to see the benefit derived from this innovation. I do not favor in a business letter the radical suppression of the words "Dear Sir," or "Gentlemen," at the beginning, and "Yours truly" at the end, or any other equivalent terms.

What is a letter? Webster's description, referring to correspondence, says, "A communication made by visible characters from one person to another at a distance," or, in other words, "it is the way of expressing yourself (in writing instead of verbally), where it is impossible of doing otherwise on account of distance." Consequently your letter is yourself and has more importance, for verbal words are forgotten, when written words remain. Who would dare go in a manager's or buyer's private office without knocking at the door and with his hat on his head? A man acting this way would be very impertinent and impolite. Consequently, if in a letter are omitted the words of introduction it surely will be open to criticism.

Business letters from merchant to merchant or to manufacturer may be divided in five classes, as follows: 1. A payment of an account. 2. An order per mail. 3. Letter complaining of shortage of goods or error in prices. 4. A request for quotations. 5. A request of delay for payment.

In the two first cases printed forms of letters or post cards are used, and the printing of a few additional words costs nothing. In the third, fourth and fifth cases the customer should be handled very carefully, for many firms spend enormous sums of money in opening business connections through travelers, whose work is greatly injured by the neglect or carelessness of the men in charge of the correspondence of the house; hence the necessity in writing of expressing your pleasure and agreeable disposition toward your customer instead of letting him infer from your expressions and terms your independence and desire of cutting short your letters. These will surely not bring the orders.

There is still a great deal of sentiment in business, and social acquaintance will often open a half door to a business proposition. If materialism was the only pleasure found in business, life would be very lonesome. The writing of these introductory words and finishing phrases takes only the time of the stenographer.

As to the advantage of being able to add to the letter by the suppression of the finishing phrase, it would often happen that the additional words might not be in the proper place. Moreover, it is a well-known fact that the stenographer has not the advantage of knowing the customers as well as the head of the department, which knowledge is absolutely necessary to write an effective and proper letter, by using the expressions that would appeal to the customer on account of his personal disposition.

For all these reasons I question the universal adoption of the Adams Company's system.

FRED. C. LARIVIÈRE.

MONTREAL, November 7, 1907.

The owners of the iron mines of the Meurthe-et-Moselle District in France, who sell minette ore for export, have organized a common selling agency, the Comité des Forges et Minerais de Fer de Meurthe-et-Moselle, with M. de Rougemont of Nancy, France, at the head.

The works of the Aluminum Company of America, at St. Louis, Mo., have been closed down temporarily owing to lack of orders. The plant smelted aluminum ore and shipped it to the company's other plants at Niagara Falls, N. Y., and New Kensington, Pa.



## NEWS OF THE WORKS.

### Iron and Steel.

The E. & G. Brooke Iron Company, Birdsboro, Pa., blew in its No. 3 furnace November 15. It is the intention to blow out the company's No. 2 furnace early in December.

The rolling mill and brake beam plant recently acquired by the Pennsylvania Brake Beam Company, Easton, Pa., is equipped with a 24-in. three-high train of rolls, 1500 hp. of boilers and a 1000-hp. engine.

In a recent statement concerning the Jackson Iron & Steel Company, Jackson, Ohio, which has completed the construction of a new plant, the names of some of the officers were erroneously given. Moses Morgan is president; Charles H. Wheeler, general manager; James G. Morgan, secretary and treasurer, and W. W. Williams, superintendent. Pickands, Mather & Co., Cleveland, Ohio, are sales agents for the products of the company.

The Bessemer steel plant and finishing mills of the Republic Iron & Steel Company, at Youngstown, Ohio, are temporarily idle this week owing to lack of orders.

The Bessemer steel plant, skelp and pipe mills of the Youngstown Sheet & Tube Company, at Youngstown, Ohio, are closed down this week for lack of orders. It is possible the plant will resume December 2, if orders received in the meantime justify.

### General Machinery.

The Phoenix Mfg. Company, Eau Claire, Wis., has completed important additions to its plant, which include a new machine shop, 92 x 202 ft. The machinery for this addition is now being installed, and it is supplied with a 15-ton electric traveling crane of 42 ft. span. The company manufactures logging machinery and log hauling locomotives.

The D. L. Baker Machine Company, manufacturer of the Baker improved planter, which is arranging to erect a new machine shop, is located at Scio, N. Y., and not at Alfred, as was recently stated in these columns.

The new buildings to be constructed at Marshalltown, Iowa, by the Iowa Central Railroad to replace those recently destroyed by fire, will consist of a car shop about 75 x 500 ft., and a paint shop about 30 x 165 ft. The machinery in the car shop was completely destroyed and contracts have been placed for a complete equipment of woodworking machinery for the new building.

Because of the death of the mother of P. B. Yates, president and general manager of the Berlin Machine Works, Beloit, Wis., the factory was closed November 12 and 14. The incident gave rise to an unfounded report that the company had shut down indefinitely. On the contrary, it is running with only a little less than the usual working force.

The Cleveland Crane & Car Company, Wickliffe, Ohio, reports the following recent shipments: A 20-ton crane to the Nashville Water Works, Nashville, Tenn.; one 5-ton and one 10-ton crane, Kane & Rice Belt Irrigation Company, Houston, Texas; 25-ton four-motor 25-cycle a. c. crane, Astoria Light, Heat & Power Company, New York; four cranes, Wall Papers Mfg. Company, London, England; 15-ton crane, Union Switch & Signal Company, Pittsburgh; 10-ton three-motor crane, Hardwick Foundry & Machine Company, Dallas, Texas; 25-ton three-motor crane, Wickwire Steel Company; one 5-ton and one 15-ton three-motor crane, Thomas D. West Foundry Company, Sharpsville, Pa.

### Power Plant Equipment.

The Sullivan-Frank Steam Boiler Company, 6714-6716 South Chicago avenue, Chicago, Ill., has changed its name to the R. E. Frank Steam Boiler Company. No change of management is involved in the change of title.

The Citizens' Water, Light & Power Company, Carbondale, Ill., now being organized, will have a capital stock of \$75,000, which will be devoted to the operation of a public utility plant. The incorporators are C. E. Hamilton, J. S. Lewis and L. R. Harrington.

At Newton, Miss., the Council has awarded a number of contracts on the water works system to be installed. The Ahrens & Ott Mfg. Company, New Orleans, was awarded the contract for manufacturing the cast iron pipe and specials, valves, boxes and hydrants, for \$13,365.05. A. M. Lockett & Co., New Orleans, were awarded the contract for furnishing the pumps, connections and valves, at \$3865.

The Casey-Hedges Company, Chattanooga, Tenn., states that its boiler shop is working full with old orders, but new business is rather falling off. In its soil pipe and plumbers' cast iron supplies department it is also busy, which is very gratifying. Extensions and improvements of the boiler plant are progressing, and the enlarged works is expected to be in full operation by July, 1908. Additions to equipment will include two hydraulic riveters and a 500-ton flanging machine, which, it is said, will be the largest in use south of the Ohio River.

In view of the necessity for a larger supply of pure water, it is probable that the Council of Atlantic City, N. J., will authorize the expenditure of \$250,000 for larger reservoirs and the building of new pumping stations, laying new mains, &c.

The Pittsburgh office of the Du Bois Iron Works, Du Bois, Pa., has received an order for two 80-hp. gas engines, to be direct connected to two 50-kw. Crocker-Wheeler generators, from the Real Estate Savings & Trust Company, Allegheny, Pa.

### Foundries.

The Chattanooga plant of the American Brake Shoe & Foundry Company, Mahwah, N. J., is about completed and will be ready for operation within a few days.

The Mayo Iron Works Company, Richmond, Va., which succeeded in April to the business of the Cameron-Tennant Company, engineer and machinist, has added an iron and brass foundry to take care of increased business.

The Geo. H. Smith Steel Casting Company, Milwaukee, Wis., states that orders have been coming in somewhat more freely within the past two or three weeks, and a hopeful outlook for the development of future business is expressed.

The plant of the Hudson & Sharp Foundry, Green Bay, Wis., is being enlarged by a two-story brick addition, work upon which is being carried rapidly forward.

The plant of the Michigan Crucible Steel Castings Company, Detroit, Mich., was recently damaged by fire. The loss sustained was fully covered by insurance. Operations were quickly resumed in a small way, and the plant is now running full.

It is stated that the Marshall Car Wheel & Foundry Company, Marshall, Texas, will rebuild the part of its plant which was recently destroyed by fire.

The W. P. Taylor Iron Company, Buffalo, N. Y., has just completed and is occupying its large new foundry building on Howard street.

The Zanesville Malleable Iron Company, Zanesville, Ohio, which has been making a specialty for some time of malleable castings and general car equipment, has gone into the manufacture of street car gear cases.

### Motors and Small Engines.

The F. G. Gauntt Mfg. Company, Fort Wayne, Ind., is in the market for gasoline engines of 2 to 8 hp. for use on its concrete machines.

### Bridges and Buildings.

The Elgin Concrete & Structural Company, Elgin, Ill., has been incorporated with a capital of \$15,000. The incorporators are John McBride, F. E. McEwan, L. B. Smith and B. S. Parker.

The Superior Steel Company, Carnegie, Pa., manufacturer of hot and cold rolled strip steel, has placed a contract with the Penn Bridge Company, Beaver Falls, Pa., for the erection of a steel building 80 x 246 ft., to adjoin the present plant of the company, and which will contain equipment for rolling strips from 6 to 16 in. It will also contain heating furnaces and other necessary equipment, contracts for which have been placed, and part of the machinery has already been delivered. This addition will give the company a much larger output in the manufacture of strip steel, and it is expected to have the new addition in full operation not later than February 1.

### Fires.

The bobbin roughing plant at North Newport, Vt., of the Draper Company, Hopedale, Mass., manufacturer of textile machinery, was burned November 21, with a loss of about \$40,000.

The machine shop of the United States Coal & Oil Company, Holden, W. Va., was burned November 18, with a loss of \$5000.

The plant of the Zenith Foundry Company, Phelps, N. Y., was burned November 21, the loss being about \$9000.

The machine shop and storeroom of the Meyer Machine Company, Petersburg, Ind., were damaged \$6000 by fire November 23.

The plant of the Louis Lipp Company, Cincinnati, Ohio, manufacturer of plumbers' supplies, was badly damaged by fire November 22.

The Port Huron Engine & Thresher Company's plant at Port Huron, Mich., was damaged \$6000 by fire November 15.

### Hardware.

The Adell Bros. Mfg. Company, Orange, Mass., manufacturer of metal stampings, has recently equipped its plant so that it does its own japanning, nickel plating and deoxidized finishing.

The Malleable Steel Range Company, South Bend, Ind., has moved into its new and well appointed plant at the corner of Cherry and Jefferson streets. The new building is 150 x 200 ft., three stories, of brick and steel construction. Facilities are provided for largely increased output.

To take care of its increasing business the Martin-Senour Company, Chicago, manufacturer of paint, is putting up a four-story brick addition to its present factory. This company was started 25 years ago with a capital of \$15,000, which was increased in 1893 to \$50,000; ten years later it was raised to \$100,000, and about a year ago was doubled, making its present capital \$200,000.

F. E. Myers & Bro., manufacturers of pumps, hay tools, &c., Ashland, Ohio, have just completed their annual inventory, and find that the past has been one of their most successful years.

and the volume of business the largest in their history. Their extensive plant has been put in the most favorable condition with regard to equipment and arrangement of the different departments, and they are in better position than ever before to take care of the orders of the trade.

Among extensions recently made to the plant of the Remington Typewriter Company, Ilion, N. Y., are two buildings for foundry purposes. One is a new brass foundry, 65 x 75 ft., in which the Remington white metal alloy will be produced in greater quantities than ever and used in making castings with the aid of the ingenious molding machines already in extensive use in the iron foundry. The other new building, 30 x 122 ft., will be used for inspecting, cleaning and grinding castings, and also for additional fireproof storage of the company's valuable metal patterns. With the additions and improvements made during the past year the capacity of the plant has been increased nearly one-half.

The American Nailless Horseshoe Company, Lebanon, Pa., is about to erect a plant which will be 60 x 150 ft. in dimensions.

#### Miscellaneous.

The United States Coin Register Company, Monroe, Mich., which is building a new plant, has incorporated with a capital stock of \$200,000, \$100,000 of which is paid in.

The machinery in the plant of the King Stove & Range Company, Sheffield, Ala., was in a separate building from the one destroyed by fire and was therefore uninjured. The principal loss sustained was in the molding room.

Architects Adams & Alsup, Chattanooga, Tenn., are drawing plans for a large plant to be built in that city by the Southern Car & Supply Mfg. Company, of which James M. Wiggs of Beaumont, Texas, is president. A 12-acre site adjacent to the plant of the American Brakeshoe & Foundry Company has been acquired. Several steel and concrete buildings will be constructed. The contract for the steel work has been let to the Converse Bridge Company, Chattanooga. The machine shop will be about 100 x 170 ft. The machinery of the plant at Beaumont will be moved to Chattanooga.

The Fortville Novelty Company has been incorporated at Fortville, Ind., to manufacture novelties, weighing machines, &c. The directors are A. B. Ayres, M. M. Ayres and C. C. Ball.

The Frankfort Brass Works, Frankfort, Ind., has been sold at receiver's sale to I. N. Peristine of Chicago for \$9000 cash, the buyer assuming a mortgage of \$10,000. The works will be reopened.

The Garden City Sand Company, Chicago, Ill., has been awarded contracts for furnishing firebrick for two Government garbage crematories, one being built at Newport, R. I., and the other at Fort Russell, Wyo., and municipal garbage crematories now in course of construction at Oak Park, Ill., and Hattiesburg, Miss. The entire equipment for the Hoopston Malleable Iron Company is being furnished by the company.

The Air Tight Steel Tank Company, Pittsburgh, has increased its capital stock from \$5000 to \$150,000.

The Thomas Motor Cab Company has been incorporated at Buffalo, N. Y., with an initial capitalization of \$50,000, by E. R. Thomas, president, and Edwin L. Thomas, secretary, of the E. R. Thomas Motor Company, to operate taxicabs in the principal cities. The E. R. Thomas Motor Company has an order from the new company to build 1000 of the taxicabs, the new motor vehicles which are being used in many large cities. To insure the prompt handling of this new line of manufacture the Thomas Motor Company will install considerable new and special machinery in the large three-story addition to its plant, now being completed, and will increase its working force.

The Youngstown Furnace & Supply Company, Youngstown, Ohio, is erecting a new building, 80 x 200 ft., to be used as a mounting room and warehouse at present, with the intention of turning it into a foundry at some future date. No new machinery will be required at present.

The Mayo Damper Company, Pottstown, Pa., manufacturer of motor cycles, has recently installed additional machinery and now has one of the most completely equipped plants in its line. It makes all its own castings of bronze, brass aluminum and copper, and the parts are machined, making them all interchangeable. The company also has a special method for machining and finishing the cylinders. Next year it intends to supply other manufacturers with parts, such as carbureters and motors of one and two cylinders.

The depression in business does not seem to have affected clay working manufacturers as much as some other lines, and many of them have been placing orders for new equipment. The East Liverpool Foundry, Machine & Supply Company, East Liverpool, Ohio, has received in the past two weeks, through its general manager, George A. Anderson, and its traveling representative, William Call, sufficient orders to keep its plant in operation for some time. As many new kilns and buildings are being constructed, the company has placed many orders recently for steel rails to be used as buckstays and I-beams to be used in warehouses. The company's blacksmith shop has been running entirely on pug mill knives lately.

### The British Iron Market.

The disturbed conditions in finance and falling prices in all metal markets have had their effect upon the pig iron trade in Great Britain. Demand is slack and prices have declined. On Tuesday, November 5, the low point for the year in No. 3 Cleveland warrants was reached at 49 shillings 3 pence. In the following week there was a recovery of 1 shilling 3 pence, and by the middle of November furnace companies were quoting 51 shillings for No. 3 iron. On Tuesday, November 26, No. 3 Cleveland warrants closed in London at 49 shillings 9 pence. The output of Cleveland pig iron has been somewhat increased, but is not yet equal to requirements, the stocks in Connal's public stores at Middlesbrough being still drawn upon. On November 14 these stocks amounted to 105,480 tons as compared with about 750,000 tons in the spring of 1906.

The exports of pig iron from the Cleveland District continue to be beyond expectations. Up to November 13 they were 60,344 tons, as against 64,567 tons in the previous month, 57,368 tons in November, 1906, and 37,114 tons in November, 1905—all to October 13. For the first time in more than three years the stocks of No. 3 iron in Connal's stores are now less than 100,000 tons. While no Cleveland iron was sent to the United States in October, the exports from that district were the best on record for that month, namely, 147,857 tons, as against an October average for 10 years of 104,192 tons.

### The Quebec Bridge Investigation.

The Canadian Bridge Commission appointed by the Canadian Government to investigate the recent collapse of the Quebec bridge, under construction by the Phoenix Bridge Company, Phoenixville, Pa., has finished its investigation at the plant of the company at Phoenixville, Pa., and has returned home. It is understood that the commission will be able to present a report of its findings to the Canadian Government in the course of a few weeks.

As a fitting climax to the commission's investigations, the bridge company prepared an elaborate test of a miniature section of chord No. 9, whose compression members are supposed to have failed first when the bridge collapsed. The chord used in the test was one-ninth the original size and weighed 6300 lb. A hinge testing machine was used in making the test, and the chord withstood a pressure of 26,850 lb. per square inch before giving way. A prominent official of the company said in connection with the test that "the chord tested had been prepared in the structural shops of the Phoenix Iron Company, with the same care as was the original chord, but the metal being thinner than in the actual part of the bridge, better results were obtained. The chord in the test presented failed at a higher unit stress than in the bridge, but it failed in exactly the same detail as in the bridge." The discrepancy in that while the chord tested withstood a compression so much higher than that in the bridge, which is supposed to have given way under a compression load of 18,000 lb. per square inch, is thereby explained.

The test was in charge of Prof. W. H. Burr of Columbia University, who will prepare a report on it, which will not be ready for several days and until the necessary calculations are completed no official data will be available. It was said, however, that the test was most satisfactory and a complete success, and that it would assist materially in vindicating the bridge company as far as its connection with the work on the bridge was concerned.

The Southwestern Bridge Company, Joplin, Mo., has been awarded the contract to build a bridge across the Neosho River, near Chanute, Kan. The crossing consists of one 200-ft. span, one 70-ft. span and two 30-ft. steel approaches, the roadway being 20 ft. The contract price was \$11,573. The work will be completed about June 1, 1908.



## Co-operation and Conciliation in the Steel Industry.

The most impressive gathering of leaders of the American iron and steel industry ever assembled were the guests of Judge Elbert H. Gary, chairman of the United States Steel Corporation, at a dinner given by him at the Waldorf-Astoria, on Wednesday, November 21. As will be noted from the following list of those who were present, every large producing interest was represented by its responsible and active head:

EDWARD BAILEY, president Central Iron & Steel Company.  
C. W. BRAY, president American Sheet & Tin Plate Company.  
E. J. BUFFINGTON, president Illinois Steel Company.  
J. G. BUTLER, JR., president Bessemer Pig Iron Association.  
J. A. CAMPBELL, president Youngstown Sheet & Tube Company.  
E. A. S. CLARKE, president Lackawanna Steel Company.  
E. S. COOK, president Warwick Iron & Steel Company.  
DANIEL COOLIDGE, president Lorain Steel Company.  
W. E. COREY, president U. S. Steel Corporation.  
W. B. DICKSON, second vice-president U. S. Steel Corporation.  
A. C. DINKEY, president Carnegie Steel Company.  
B. F. FACKENTHAL, JR., president Thomas Iron Company.  
E. C. FELTON, president Pennsylvania Steel Company.  
W. J. FILBERT, comptroller U. S. Steel Corporation.  
E. H. GARY, chairman U. S. Steel Corporation.  
JAMES GAYLEY, first vice-president U. S. Steel Corporation.  
E. M. HAGAR, president Universal Portland Cement Company.  
CHARLES HART, president Inland Steel Company.  
J. A. HATFIELD, president American Bridge Company of New York.  
JAMES H. HOYT, Cleveland, Ohio.  
C. R. HUBBARD, president Wheeling Iron & Steel Company.  
A. F. HUSTON, president Lukens Iron & Steel Company.  
ARCHIBALD JOHNSTON, president Bethlehem Steel Company.  
W. V. KELLEY, president American Steel Foundries.  
WILLIS L. KING, vice-president Jones & Laughlin Steel Company.  
CHAS. KIRCHHOFF, editor *The Iron Age*.  
THOMAS LYNCH, president H. C. Frick Coke Company.  
G. G. MCMURTRY, chairman American Sheet & Tin Plate Company.  
SAMUEL MATHER, Pickands, Mather & Co.  
W. P. PALMER, president American Steel & Wire Company.  
W. G. PARK, chairman Crucible Steel Company of America.  
LEONARD PECKITT, president Empire Steel & Iron Company.  
JOHN A. PENTON, editor *Iron Trade Review*.  
GEO. W. PERKINS, J. P. Morgan & Co.  
VERYL PRESTON, president Eastern Steel Company.  
J. H. REED, president Bessemer & Lake Erie Railroad Company.  
JOHN REIS, assistant to president U. S. Steel Corporation.  
CHAS. G. ROEBLING, president John A. Roebling's Sons Company.  
WALLACE H. ROWE, president Pittsburgh Steel Company.  
W. B. SCHILLER, president National Tube Company.  
C. M. SCHWAB, chairman Bethlehem Steel Company.  
I. M. SCOTT, president La Belle Iron Works.  
W. P. SNYDER, president Shenango Furnace Company.  
POWELL STACKHOUSE, president Cambria Steel Company.  
JOHN A. TOPPING, president Republic Iron & Steel Company.  
RICHARD TRIMBLE, secretary and treasurer U. S. Steel Corporation.  
W. R. WALKER, assistant to president U. S. Steel Corporation.  
F. W. WOOD, president Maryland Steel Company.  
HOWARD WOOD, president Alan Wood Iron & Steel Company.  
W. P. WORTH, treasurer Worth Bros. Company.  
AUGUST ZIESING, president American Bridge Company.

Judge Gary in his opening remarks to his guests made a frank and full statement of prevailing conditions in the industry, traced the policy pursued in the past by the great corporation of which he is the head, and expressed its desire to co-operate with all interests in meeting the situation which has developed with a full regard for the best interests not alone of all producers, but of the trade at large and of the consumer. One by one the heads of the other great companies in brief speeches voiced the conviction that demoralization, harmful to all, must follow any efforts to capture an undue share of business or an invasion of a rival's territory. It was the unanimous opinion of all present that the underlying conditions are sound, and that the recession which the industry is now experiencing will not be long continued. Emphasis was laid upon the fact by a number of the speakers that since prices of finished goods had not been materially advanced during the recent period of prosperity therefore they should not be now reduced, and that consultation must precede future adjustments. They

have not, as in past boom times, risen to a point where prices checked consumption, nor would now a slaughter of values stimulate buying. The point was made by men long identified with the industry that stability of prices is the greatest consideration, from the standpoint of the permanent interests of the producer, and that buyers generally cordially approve it, when they have the assurance that others do not have advantages over them. So unanimous was the agreement with the principles enunciated that practical means were quickly formulated for carrying them into effect. It was voted to appoint the following committee of five: Judge E. H. Gary, W. E. Corey, president of the United States Steel Corporation; Powell Stackhouse, president of the Cambria Steel Company; E. C. Felton, president of the Pennsylvania Steel Company, and Willis L. King, vice-president of the Jones & Laughlin Steel Company. This committee has power to add to its number and to appoint subcommittees. To this committee every one interested in the trade may at any time appeal for advice. Through it the trade will co-operate for the best of the industry, and conciliate any differences arising.

## OBITUARY.

ARTHUR EDGAR SAWERS, chief engineer and second vice-president of the A. Garrison Foundry Company, Pittsburgh, died at his home in Wilksburg, Pa., last week, aged 36 years. He leaves a widow and one daughter.

THOMAS R. SMITH, superintendent of the lower Union Mills of the Carnegie Steel Company, Youngstown, Ohio, died last week, aged 47 years.

PETER GERLACH, a pioneer manufacturer of machinery in Cleveland and president of the Peter Gerlach Company in that city, manufacturer of saws, tools and barrel and wooden ware machinery, died November 19, aged 76 years.

CHRISTIAN S. RUTH, who was at one time prominent in the Eastern iron trade, died at Connellsville, Pa., November 16, aged 88 years. He was born at Point Pleasant, Bucks County, Pa. He was manager of the Fairmount Iron Works, Philadelphia, for many years, and later operated a rolling mill at York. He leaves two daughters and three sons, one of the latter, Wilbur M., being constructing engineer of the Jones & Laughlin Steel Company, Pittsburgh.

GEORGE H. DAY, Hartford, Conn., long an important figure in the Pope Mfg. Company, and later with the Electric Vehicle Company, died November 21, aged 59 years. He was born in Brooklyn, Conn. After graduating from Hobart College he went to Hartford where, after a period in the insurance business, he became associated with the Weed Sewing Machine Company, which first manufactured the Pope bicycle under contract, and later was taken over as the nucleus of the Pope Mfg. Company organized in 1890, with Mr. Day as vice-president. With the Weed Company he rapidly advanced until in 1887 he was the president and treasurer. Upon the organization of the American Bicycle Company he went with the Electric Vehicle Company as its president, and later resigned the position to become manager of the Licensed Automobile Association of America. He was a director of the Aetna Insurance Company, Phoenix Mutual Life Insurance Company, American National Bank, Fidelity Trust Company and the Society for Savings, and trustee under the will of Mrs. Elizabeth Colt, Hartford, and secretary and treasurer of the Board of Trustees of the Colt bequest. He leaves a widow and five children.

WARREN A. WATERMAN, superintendent of the Standard Plunger Elevator Company, Worcester, Mass., died November 25, aged 36 years.

WILLIAM WHARTON, JR., president of the Philadelphia Roll & Machine Company, and of Wm. Wharton, Jr., & Co., Inc., died at his home in Philadelphia, November 26, aged 78 years. For eight months he had been confined



to his home by ill health. He invented the Wharton switch and Wharton manganese steel, manufactured by Wm. Wharton, Jr., & Co., Inc. This steel is in use for frogs, crossings and other track work. Mr. Wharton had filled important contracts for laying street railroad tracks in Philadelphia and other cities. He is survived by his wife, a daughter and a son, Wm. R. Wharton. Joseph Wharton, the well-known iron manufacturer, is his brother.

PRESTON C. HUESTON, president of the Morden Frog & Crossing Works, Chicago, died at his home in Jamestown, N. Y., November 25.

HENRY C. STAYER, president and general manager of the Stayer Carriage Company, Chicago, died November 11, aged 63 years. He was a native of Pennsylvania, and had been connected with the implement and vehicle business for 35 years. He leaves a widow, one son and one daughter.

## Pig Iron and Coke Shortages.

### The Report of the New England Foundrymen's Committee.

The Weight Committee of the New England Foundrymen's Association, at the meeting of the association at Boston, November 20, made a report of progress in its investigations of shortages in pig iron and coke received at New England points. Coupled with the report was a resolution that the secretary write the different transportation, furnace and coke companies and ask them if they will send representatives to meet members of this committee and others for the purpose of devising ways and means of obviating the difficulties now existing in reference to shortages. It was asked that four weeks' notice be given of time and place. The work of the committee was told in detail in *The Iron Age* of November 7, 1907, page 1300, and certain of its expected recommendations were outlined, but some of the statements and conclusions of the report are of additional interest, and considerable portions of it are therefore given below, where they supplement our article of November 7:

#### Little Railroad Weighing.

Pig iron is weighed by the furnace companies, whose weights are accepted by the initial transportation company, and these weights are not verified until destination is reached, and then only sometimes by the consignee on his own scales, unless he is located on a railroad near railroad scales, where check weight can be secured. In such cases a claim for shortage is likely to be adjusted by transportation companies, because gross, tare and net weights of the entire car are sworn to by an official weigher of the consignee and the delivering railroad. It is conceded that a small difference may exist between shipping and delivery weights, owing to the fact that it is hardly possible for any two scales to weigh exactly alike, but this cannot be the cause when scales at both shipping and delivery points are in proper order, and there is a difference of half a ton or over in weights on a carload. Judging from a tariff issued by the N. Y., N. H. & H. R. R., No. 21,184, which provides that in weighing on its official railroad scales \$1 per gross car and 50 cents a light weight shall be charged, but if out-turned weight shows a difference of over 1000 lb., as compared with billing weight, no charge shall be made, railroads concur in this belief.

Unhappily all foundries are not located on the line of railroads having scales in the near vicinity, otherwise we believe the shortage question could be easily settled. It must be admitted that a large difference between shipping and delivering weights might be shown to exist when hauling is done from a railroad yard or steamship dock in wagon loads. Now if shortages only occurred in this method of weighing the whole burden might be thrown thereon, but our investigation has shown that shortages occur where shipments have been made all-rail, with no transfer between shipping and delivery point, the weights at both places being made under con-

ditions that would seem to eliminate any possibility of error. In such cases it would seem that the payment for loss should be made by transportation companies, but, strange to state, they absolve themselves from liability with the laconic statement that it is impossible for loss to occur on their lines. How this can be verified by them they do not take the trouble to explain. We are unable to offer explanation because of not being aware that they have weighed the shipment for their own record at any point, since the weight is determined by the shipper on his own scales by his own men at the shipping point, and by the consignee on track scales at the delivery point.

#### Methods of Weighing at Furnaces.

We believe that all furnace companies have installed at their plants scales that are as nearly correct as it is possible to have them, not only because of assuring full weight to their customers, but, which is of more moment to them, because of their own protection, as all materials, such as ore, fuel, flux, &c., comprising thousands of tons per day, are weighed on them, and should the scales weigh heavier than the actual weight they would stand to lose considerable. About all of the furnaces have installed 100-ton track scales, and in some instances two sets, which are in charge of experienced weighers at good salaries, thus insuring intelligent men. Every car is weighed light and loaded, detached at both ends, to secure exact gross, tare and net weights of each individual car. The scales are frequently tested by the manufacturers, and in many instances by a railroad scale car as a check, and many are equipped with automatic devices which register gross and light weights on a scale ticket, thus eliminating chance for clerical errors. This weight is accepted by railroads as correct; freight charges are based on it and the same weight is used through to destination.

Weighing at Southern furnaces is generally done under the supervision of the Southern Weighing Association. The transporting of iron from the South is subject to more chance of loss because about 90 per cent. of it comes via Norfolk or Savannah, thence by steamer to Boston, Providence or New York, where most of it is re-handled to cars or barges for its final destination. We conclude that this extra handling could give chance for loss, notwithstanding the declarations of the steamship officials that their methods of loading and unloading do not admit of loss occurring while material is in their possession.

#### Remedies Suggested.

It has been suggested by the general freight agent of one of the leading railroads entering New England that shipments of pig iron be made as is the case with copper, by counting the pigs. This we conclude to be impractical for two reasons:

1. Breakage would occur in iron where that is almost impossible with copper.
2. Because of the expensive labor it would be necessary to employ in loading and unloading a commodity so inferior as to bulk value.

A large steamship company states its belief that the greatest discrepancy exists because of hauling in wagon loads from dock to foundry, though it offers no explanation as to cause of loss when material is transported to cars at dock for destination, where at arrival it is weighed in carloads on railroad on up to date scales of a consumer. It may be that a large apparent loss is shown because of hauling in wagon loads, but we do not believe that all losses as shown are due to this, nor does it satisfactorily explain how some overages have occurred. However, that does not alter the fact that the delivering company is unable to prove one way or the other, because it has no weights of its own which show whether or not it has delivered more or less than the billing called for.

It has also been suggested by the traffic manager of a large railroad company that pig iron be sold f.o.b. consignee's works, which would shift the burden of collecting for losses from consignee to shipper, and all claims would then be made on the initial railroad. This does not appear to be a practical solution, since the fact still remains that the delivering transportation companies cannot

show authentic delivery weights to consumers. Moreover, as they will not accept the consignee's weights as reliable, it would be, as it stands now, impossible for the shipper to collect from them, and therefore would be unjust, and a heavy burden, to ask the furnace company to stand all losses that might occur in transit. It must be taken into consideration that the furnace companies would have to sell f.o.b. cars or dock at a certain destination, and not in the yard of a consumer. This brings us back again to the reason for which many claims have been refused settlement by transportation people, namely, that the latter refused to accept the weight as shown to have been taken on yard scales after the iron has been hauled in wagon loads from car or dock. And the furnace company cannot allow the claim for shortage; since the material was distinctly sold f.o.b. car or dock there is no way of knowing whether the shortage occurred before or during hauling, and the consignees cannot adjust the matter with the transportation people.

We must conclude that the only way that can be seen at the present time to adjust the matter would be to have transportation companies weigh each carload at points of transfer from one road to another, thus showing conclusively on which road the loss occurred; or else determine by standard scales furnished by themselves or consignees at delivery point what the correct weight is that they deliver to consignees; this weight to be agreed to by all parties as authentic delivery weight, just as the present shipping weight is considered to be authentic shipping weight; and, further, that each transportation company that has handled the shipment stand for its proportionate share of any loss, for both material and freight rate on the same.

#### **The Practice in Shipping Coke.**

Shipments of coke are in all cases weighed by railroads at their scales nearest to shipping point. The railroad notifies the coke company of the weight, and the material is invoiced in accordance therewith. Weighing is done in trains moving at a moderate rate over scales. The stenciled weight, as shown on the car, is taken as the tare (unlike furnace companies, who, in weighing iron, disregard marked tares entirely), and net weight is obtained by deducting stenciled tare from gross scale weights.

Investigation brings to light the fact that there is a wide difference between the actual tare and the tare stenciled on cars. In nearly every instance the actual tare is heavier than that marked on car. This in itself means a loss to the consignee; but when coupled with what material may be stolen or shaken out during transportation (because it is impossible to close and seal doors on box cars, owing to the regulation of railroads that doors be left open as a precaution against fire), it is not surprising that substantial differences exist between billing and delivery weights on this commodity.

We conclude that if railroad companies would take particular care to see that the tare weight is correct much of the shortage trouble on coke might be eliminated; next let them devise some plan to determine exact weight upon arrival at destination that railroads would accept as authentic, and which could be used in filing claims when shortages occur, thus enabling adjustment to be made more easily. As it stands now, when a consignee files claim for shortage, using weights, as shown on his scales, after carting from car in wagon loads, he is invariably told that railroad weights at shipping point are to govern, and that is generally as near a settlement as he will get. It does not seem fair that consumers should be asked to accept railroad weight at shipping point, and then be compelled to stand all losses that occur before destination is reached, any more than it would be to ask shippers to accept railroad delivery weight and assume expense for all losses that might occur in transit.

#### **Referred to the Interstate Commerce Commission.**

This matter has been presented to the Interstate Commerce Commission. The secretary replied that "matters of loss of, and damage to, shipments in transit ordinarily are not held to be within the jurisdiction of the commission, recourse in such cases being to the courts. Likewise, differences between carriers and shippers in regard to

weights of shipments are not held to be within the jurisdiction of the commission, but properly referable to the courts. Cases might occur, however, wherein unjust discrimination as between shippers might result from improper weights being applied, and possibly unjust discrimination might occur in connection with treatment of cases of loss and damage, which cases might then come within this commission's jurisdiction." The matter has been referred to the commission for its consideration.

The Philadelphia and Pittsburgh Foundrymen's Associations have appointed committees who are now making investigations and they will report the results of their work later. This committee has received letters from parties in New York and Pennsylvania stating they were much interested in the movement, for they have experienced shortages, and they ask that they be advised as to what plan to eliminate the trouble the committee suggests to be followed.

#### **The Committee's Solution.**

But one correct solution has been found by the committee, and that is to have transportation companies furnish scales to weigh on at delivery points, delivery weight to be compared with that of railroad at shipping point (actual tare to be taken), and where differences occur between the two adjustments to be made accordingly. It is recognized that to follow out this suggestion the transportation people have many obstacles to overcome, because this additional weighing would necessarily serve as a hindrance to the quick movements of freight, which at the best is slow enough to-day; but then the rates now charged for transportation to New England points would seem to be sufficient to guarantee delivering all tonnage that is shipped, and the consumer ought not to be expected to stand for loss of material and freight on the same, which loss, no matter how small on each carload, will reach a respectable total in the course of a year. This perhaps would be more evident to the New England consumers than to those of any other consuming section of the country, because of its being so much further away from the source of supply, and the freight charge accordingly so much higher.

#### **Coal Shortages.**

With reference to shortages of coal on shipments to foundrymen in this territory it was found that but little coal was purchased, and that generally of local dealers. The same conditions exist as with the coke trade—the same causes of variation between billing and delivery weights—and transportation companies are even more reticent here in suggesting remedies, while they are also quicker to decline claims on coal shortages. Where shipments of coal are made by water large losses frequently occur; but this is so common as to be almost expected.

The Snow Steam Pump Works, Buffalo, N. Y., which recently cut down the working time of employees in some of the departments, has ordered its forces back on full time. E. C. Lufkin, general manager of the company, states that the whole industrial and financial situation has so greatly improved the past week that the company has been obliged to restore the full schedule of working hours to keep up with its orders.

The Lackawanna Steel Company, Buffalo, N. Y., has a large force of men working on the repairs of the furnaces and mills that were closed down two weeks ago, pushing them as rapidly as possible so that the entire plant may be in condition to run at full blast when business revives. The four mills now running have ample orders.

The superintendents of blast furnaces of the Carnegie Steel Company in Pittsburgh, the Mahoning and Shenango valleys, and the Wheeling and Bellaire districts, met in Youngstown, Ohio, last week for conference. Once a month these superintendents meet in one of the cities where the company's blast furnaces are located to discuss blast furnace methods and other matters of mutual interest.



## PERSONAL

Harvey T. Andrews, for the past 10 years assistant appraiser in charge of the ninth or metal division of the office of the Appraiser of the Port of New York, has resigned to take effect December 10. Mr. Andrews leaves the Government service in order to devote more time to his private interests, and also to practice law.

Marion de Vries and Byron S. Waite, general appraisers, who are members of the special commission sent abroad by the Treasury Department to study export and general customs conditions, returned to this country Saturday. Mr. de Vries says the governments and trade organizations of Europe all co-operated with the commission in solving problems which in the past have given rise to controversies.

George A. Gallinger, a traveling representative from the Chicago office of the Independent Pneumatic Tool Company, has been appointed Pittsburgh manager of this company with office at 1210 Farmers' Bank Building, Pittsburgh. A complete line of Thor pneumatic tools and extra parts will be carried in that city.

A number of the officials of the United States Cast Iron Pipe & Foundry Company recently visited its immense new foundry that has been built at Scottdale, Pa. The party was composed of President George B. Hayes of New York City; Vice-President George J. Long of Louisville, Ky.; Western Sales Manager A. J. Goodhue of Chicago, and Director E. C. Fuller of Columbus, Ohio. A thorough inspection of the plant, which is one of the most modern in the country, was made, and a lengthy conference held with the local management.

Charles M. Reese, late of the American Locomotive Company's works at Richmond, Va., will shortly assume the position of general superintendent of the W. J. Oliver Mfg. Company, Knoxville, Tenn.

James H. Baker, who is much the largest single stockholder in the Solid Steel Tool & Forge Company, Brackenridge, Pa., has resigned his official connection with that company as president and general manager, intending after a brief vacation to open an office in Pittsburgh, where he will devote his attention to the development of forging machinery and forgings, including car wheels.

W. A. Cornelius has been made general manager of the National Department of the National Tube Company at McKeesport, Pa., succeeding George C. Crawford, recently appointed president of the Tennessee Coal, Iron & Railroad Company. Mr. Cornelius was born in Philadelphia and is a graduate of Lehigh University. For 11 years he was with the Carnegie Steel Company at Homestead, in the engineering, mechanical and construction departments. He went to McKeesport in 1900 as superintendent of the Monongahela furnaces and later was made superintendent of the National Rolling Mills and the Boston Iron & Steel Works. Then followed his promotion to assistant manager of the National Tube Company, including the Republic mills on the South Side, Pittsburgh.

Wm. T. Heck has been appointed general manager of the Findlay Foundry & Machine Company, Findlay, Ohio.

H. B. Ayers has been appointed general manager of the H. K. Porter Company, Pittsburgh, builder of light locomotives. For the past two years Mr. Ayers has been in charge of the Canadian Locomotive Works at Montreal, previous to which he was general manager of the Pittsburgh Locomotive Works, Allegheny, Pa.

James W. Taylor has been appointed paymaster of the Jeffersonville, Ind., shops of the American Car & Foundry Company, succeeding Harry Hensel, who retires because of ill health.

Robert Goldmann of Vienna, Austria, is spending some time in the Cincinnati machine tool field investigating American systems and methods of manufacturing. He is a mechanical engineer, very much interested in what Cincinnati is doing, and will probably become identified in some important capacity with a Cincinnati concern looking to a possible future connection as European

representative. He is an advocate of branch European factories working along American lines and building American tools.

The relations between Wilbur F. S. Lake as general manager and the Buffalo Forge Company, Buffalo, N. Y., have been terminated. Mr. Lake has as yet made no definite plans for the future.

W. C. Henning, formerly with the John A. Roebling's Sons Company, at Cleveland, Ohio, has been elected president and treasurer of the Durable Wire Rope Company, Boston, Mass., and has assumed full charge of the business.

Frank Suess, formerly assistant manager of the New York office of Hill, Clarke & Co., has been appointed manager of that office, succeeding J. H. Keegan, who gave up his position to go into business for himself. F. C. Lowell, who has been connected with the Boston office of Hill, Clarke & Co., has been appointed assistant to Mr. Suess.

Frank Phalen, formerly connected with the Chicago office of the Republic Iron & Steel Company, goes to the St. Louis office to succeed Dwight S. Guthrie as manager of sales, the latter having been appointed manager of sales for the Southern district, with offices at Birmingham, Ala.

L. T. Beecher has been elected secretary and treasurer of the Tennessee Coal, Iron & Railroad Company, with headquarters at Birmingham, Ala.

Hugh Dewart has been appointed assistant treasurer of the Republic Iron & Steel Company and secretary of the Executive Committee, succeeding L. T. Beecher.

## The Wharton Steel Company.

Since the publication of the announcement of the organization of the Wharton Steel Company in *The Iron Age* last week a number of points of general interest have been brought out. It is probably a unique instance in the iron industry of the organization of a company transferring so large an amount of property that it begins its corporate life without any bonds or any debts whatever. It is practically the transfer of Joseph Wharton's personal property to a corporation in order to perpetuate the business. The directors of the new company are Joseph Wharton, J. Bertram Lippincott, Harrison S. Morris, Edward Kelly and Benjamin Nicoll. The president is Joseph Wharton; the vice-president J. Bertram Lippincott; the secretary Harry S. Wenner; the treasurer Harrison S. Morris, and the general manager Edward Kelly. The general business arrangements heretofore existing will be maintained, B. Nicoll & Co., New York, continuing as general sales agents.

Mr. Wharton has long been the largest owner of real estate in New Jersey, his holdings including about 125 square miles in southern New Jersey and about 5000 acres of mineral and wood lands in northern New Jersey. The new company takes over a number of developed and active magnetic and hematite mines, including the Hibernia, with a capacity of 30,000 tons of crude ore per month; the Orchard and Hurd, with a production of 15,000 tons of crude ore per month; the Allen and Tybo, not now operating, and the Rossie, in New York, with an output of 8000 tons per month. The New Jersey ores are treated in two magnetic ore concentrating plants. The property includes the Wharton & Northern Railroad, connecting with the Erie on the north and the Central Railroad of New Jersey and the Lackawanna on the south and also the Hibernia Mines Railroad, six miles long, connecting with the Central Railroad of New Jersey at Rockaway, now operated under lease of the latter road.

The property includes coal lands at Coral, Indiana County, Pa., with coke ovens having a capacity of 600 tons per day, and coal lands and coke works at Smithville, in the Lower Connellsville region, having a capacity of 5000 tons per month. There are four blast furnaces—three at Wharton, N. J., and one at Andover, N. J.—with a total capacity of 1000 tons per day, making foundry, forge and basic pig iron.



## The Iron and Metal Trades

The moral influence of the interchange of opinions at the Gary dinner last week can hardly be overrated, since it extends and strengthens the satisfactory relations which have existed for some time since among the larger companies. There was a clear and frank recognition of the serious situation into which the industry has been suddenly plunged, with a strong undertone of confidence in its future. It may be regarded as settled that there will be no indiscriminate cutting of prices of rolling mill products, which alone are involved, and that what price adjustments need be made as the new year approaches—and they are likely in some lines—will be carried out after consultation among those interested, which is really as far as any engagements have gone or could be made. The committee appointed at the dinner has no direct power to make decrees or to enforce them. It will act merely in the interest of harmony, and its chief attainments will be to promote co-operation and to conciliate, after consultation.

The impression seems to have gone out that the committee will embrace in its sphere the interests of Merchant Pig Iron, and that it will even regulate the prices for Pig Iron. That is not so.

The voluntary restriction of output is spreading, and is expected to become even more marked as plant after plant reaches the end of orders which can safely be shipped. The United States Steel Corporation now has only 50 furnaces in operation, and is operating 51½ per cent. of its capacity. Alabama will be down to 17 active furnaces next week, of which 11 stacks are making Merchant Iron. In the Chicago District only one Merchant furnace has stopped, but others will follow. At the Lower Lake ports a number of furnaces have blown out and others will follow. Production in the Valleys will be sharply reduced.

Steel plants and rolling mills are adjusting themselves closely to the specifications which reach them. This applies also to the works which produce season goods, like Tubes, Wire, Tin Plate and Sheets. These, however, later in the winter are expected to accumulate an adequate stock to take care properly of the spring trade when that opens.

Readjustments of wages are being made, or are in contemplation throughout the whole industry and are being accepted with little discussion. As a rule they amount to about 10 per cent.

So far as new business is concerned the week has been exceedingly quiet. There has been a little buying of Basic Pig in eastern Pennsylvania, at a concession. In the principal distributing markets for Southern Iron there has not been enough business to test the situation. There are indications, however, that material concessions would be granted for delivery during the first quarter of 1908.

Some works managers report that specifications for material are coming in to a more satisfactory extent, reflecting some improvement, but that is not the general experience.

Little has been done in structural material. In New York 2000 tons has been ordered by the Delaware & Hudson Railroad, while the pier work for the Central Railroad of New Jersey, amounting to about 1200 tons, has been taken by an Indianapolis concern. In the middle of next month bids will be opened for between 15,000 and 16,000 tons of Structural Material for the New York approach of the Manhattan Bridge.

The Scrap Iron trade is in a very much demoralized condition.

The sharp upturn in the London Copper market has frightened off domestic buyers again, and little has been done in the past few days. Spelter has had another decline, falling to 4.70c., New York.

## A Comparison of Prices.

Advances Over the Previous Month in Heavy Type,  
Declines in Italics.

At date, one week, one month and one year previous.

	Nov. 27, 1907.	Nov. 20, 1907.	Oct. 30, 1907.	Nov. 28, 1906.
<b>PIG IRON, Per Gross Ton:</b>				
Foundry No. 2, Standard, Phila- delphia .....	\$18.75	\$19.00	\$19.50	\$24.00
Foundry No. 2, Southern, Cincin- nati .....	18.75	19.25	20.25	25.00
Foundry No. 2, Local, Chicago...	19.25	20.00	21.50	25.50
Bessemer, Pittsburgh.....	19.90	20.90	22.90	23.35
Gray Forge, Pittsburgh.....	18.90	18.90	20.40	22.85
Lake Superior Charcoal, Chicago	25.00	25.00	26.00	26.00

<b>BILLETS, &amp;c., Per Gross Ton:</b>				
Bessemer Billets, Pittsburgh...	28.00	28.00	28.00	29.50
Forging Billets, Pittsburgh....	30.00	30.00	31.00	36.50
Open Hearth Billets, Phila....	30.00	30.00	30.00	33.00
Wire Rods, Pittsburgh.....	34.00	34.00	35.50	37.00
Steel Rails, Heavy, Eastern Mill	28.00	28.00	28.00	28.00

<b>OLD MATERIAL, Per Gross Ton:</b>				
Steel Rails, Melting, Chicago...	13.75	14.50	16.00	20.50
Steel Rails, Melting, Phila....	12.00	12.75	13.50	20.00
Iron Rails, Chicago.....	16.00	16.00	19.50	28.00
Iron Rails, Philadelphia.....	17.50	19.00	20.50	27.50
Car Wheels, Chicago.....	22.00	22.50	24.50	24.00
Car Wheels, Philadelphia.....	19.00	19.00	20.50	23.00
Heavy Steel Scrap, Pittsburgh...	14.50	14.50	16.75	20.00
Heavy Steel Scrap, Chicago....	12.00	12.00	14.00	17.50
Heavy Steel Scrap, Philadelphia	12.00	12.75	13.50	19.50

### FINISHED IRON AND STEEL,

Per Pound:	Cents.	Cents.	Cents.	Cents.
Refined Iron Bars, Philadelphia.	1.75	1.75	1.75	1.83½
Common Iron Bars, Chicago....	1.75	1.75	1.78	1.71½
Common Iron Bars, Pittsburgh.	1.60	1.70	1.70	1.80
Steel Bars, Tidewater, New York	1.76	1.76	1.76	1.74½
Steel Bars, Pittsburgh.....	1.60	1.60	1.60	1.60
Tank Plates, Tidewater, New York	1.86	1.86	1.86	1.84½
Tank Plates, Pittsburgh.....	1.70	1.70	1.70	1.70
Beams, Tidewater, New York...	1.86	1.86	1.86	1.84½
Beams, Pittsburgh.....	1.70	1.70	1.70	1.70
Angles, Tidewater, New York...	1.86	1.86	1.86	1.84½
Angles, Pittsburgh.....	1.70	1.70	1.70	1.70
Skelp, Grooved Steel, Pittsburgh	1.70	1.70	1.85	1.65
Skelp, Sheared Steel, Pittsburgh.	1.80	1.80	1.95	1.70

### SHEETS, NAILS AND WIRE,

Per Pound:	Cents.	Cents.	Cents.	Cents.
Sheets, No. 27, Pittsburgh.....	2.50	2.50	2.50	2.50
Wire Nails, Pittsburgh.....	2.05	2.05	2.05	1.90
Cut Nails, Pittsburgh.....	2.00	2.00	2.05	1.95
Barb Wire, Galv., Pittsburgh...	2.50	2.50	2.50	2.35

<b>METALS, Per Pound:</b>				
Lake Copper, New York.....	13.75	13.25	14.25	22.75
Electrolytic Copper, New York.	13.62½	13.00	14.00	22.50
Spelter, New York.....	4.70	5.05	5.40	6.40
Spelter, St. Louis.....	4.60	4.85	5.30	6.30
Lead, New York.....	4.25	4.40	4.60	6.00
Lead, St. Louis.....	4.10	4.25	4.50	5.87½
Tin, New York.....	31.20	30.70	32.00	43.40
Antimony, Hallett, New York...	9.00	9.50	11.00	25.00
Nickel, New York.....	45.00	45.00	45.00	45.00
Tin Plate, 100 lb., New York...	\$4.09	\$4.09	\$4.09	\$4.09

## Chicago.

FISHER BUILDING, November 28, 1907.—(By Telegraph.)

Since trade movements now hinge upon and are in a very large measure controlled by the extraordinary financial conditions, any signs of improvement in this direction are eagerly scanned. Bank officials are discussing the possibility of an early resumption of currency payments, but no definite steps have as yet been taken to this end. It was this week stated by the officer of a leading bank that gains were being made in the accumulation of cash reserves, and that while talk of immediate return to the usual methods of payments might be a little premature yet the outlook in many respects is distinctly better. The large volume of money locked up in unmoved crops, when released, as it should be soon, cannot but help the situation. Collections are slow, of course, but there are surprisingly few cases of suspension or failure reported among industrial concerns. This is in striking contrast with the results that followed the depression of 1893 and reflects the general strength and soundness of such interests. The foundry melt has fallen off perhaps 50 per cent., but few such plants are closed down. Many have orders for castings on hand which would keep them running full up to and even beyond the first of the year, but most of these have been temporarily held up, simply because funds are not available to meet payment on shipments as they would come due. There is a growing belief, therefore, that as soon as the money famine is over there will be a general reinstatement of orders and a quick reaction in business. Only one of the merchant iron furnaces in the Chicago District has blown out, but within the next week or 10 days

several others will follow. The local finishing mills are all in operation, but generally at reduced capacity. The huge quantity of 35,000 tons of Structural Material will soon be required for the Corn Products Company's new plant and the Steel mills at Gary. Work on the former has been begun and on the latter continues without restraint.

**Pig Iron.**—There has been no appreciable acceleration of movement in Pig Iron since last report. With a decrease in consumption and continued receipts from contract shipments, stocks in foundries' yards are ample for and often in excess of needs. There is, therefore, very little demand from any source, and car lots come pretty nearly being the maximum of tonnage included in the few scattering orders received. Furnace shipments are very light, having been heavily curtailed by requests for postponement of contract deliveries. The question of price is perplexing because of the wide variation that appears in reported sales. There is unquestionably a considerable amount of resale Iron being offered, which in face of the light demand, if disposed of at all, necessarily goes at a low figure. By reason of the pressure of money stringency, exigencies arise under which the question of values is to a large extent ignored. Such transactions, however, are no criterion of the true market level. While the furnaces are not pressing for business, it is evident that most of them would not refuse tonnage on a basis of \$15, Birmingham, but none of any consequence is being offered at that or any other price. One furnace in the Chicago District was blown out last Friday, and others in the chain of Northern interests will follow within a few days. It is the aim of most producers to reduce their Coke supply and pile up enough Iron to take care of postponed orders and waiting shipments. Collections are slow, but promise improvement in the near future. There is a general feeling among the trade that when the pinching tightness of money has passed business will rapidly improve. Prices quoted are only nominal and represent what could be done on average transactions. All the following prices are for December delivery, f.o.b. Chicago:

Lake Superior Charcoal.....	\$25.00 to \$25.50
Northern Coke Foundry, No. 1.....	19.75 to 20.25
Northern Coke Foundry, No. 2.....	19.25 to 19.75
Northern Coke Foundry, No. 3.....	18.75 to 19.25
Northern Scotch, No. 1.....	20.75 to 21.25
Ohio Strong Softeners, No. 1.....	20.75 to 21.25
Ohio Strong Softeners, No. 2.....	20.25 to 20.75
Southern Coke, No. 1.....	19.85 to 20.35
Southern Coke, No. 2.....	19.35 to 19.85
Southern Coke, No. 3.....	18.85 to 19.35
Southern Coke, No. 4.....	18.35 to 18.85
Southern Coke, No. 1 Soft.....	19.85 to 20.35
Southern Coke, No. 2 Soft.....	19.35 to 19.85
Southern Gray Forge.....	17.35 to 17.85
Southern Mottled.....	16.35 to 16.85
Malleable Bessemer.....	19.00 to 19.50
Standard Bessemer.....	22.40 to 22.90
Jackson Co. and Kentucky Silvery, 6 %.....	30.40 to 30.90
Jackson Co. and Kentucky Silvery, 8 %.....	32.40 to 32.90
Jackson Co. and Kentucky Silvery, 10 %.....	34.40 to 34.90

(By Mail.)

**Billets and Rods.**—The market is practically without orders for semifinished material, except for the few odd lots in carloads or less that are needed for immediate use. The largest local users of Forging Billets seem to have ample stocks on hand to take care of the present moderate demand, and no inquiries are coming from this source. Prices on Forging Billets remain at about \$34, Chicago. There is no movement of consequence in Wire Rods, and prices are nominally held at \$34 to \$35, Pittsburgh.

**Rails and Track Supplies.**—Only a small tonnage of prompt delivery orders has come into the market during the week. As in other departments of railroad material, purchases are apparently being held closely to actual and indispensable requirements. A few carload orders of Light Rails are reported, but conditions governing the demand are much the same as are found in other traction interests. Spikes reflect the lessened activity in railroad work and are moving slowly. Prices are unchanged.

**Structural Material.**—It is conservatively estimated that in the local live projects of construction work held up solely on account of money stringency, there are at least 30,000 tons of Structural Material involved. Nearly all of these enterprises are of a substantial character and will doubtless proceed as soon as the financial situation clears. Plans for new construction at Gary, which has not been checked, call for 25,000 tons of Structural Shapes, orders for which will probably be placed soon. By the first of January it is expected that plans for the Structural work on the new plant of the Corn Products Company, to be erected at Summit, Ill., will be ready for bids. Approximately 10,000 tons will be used in the 30 buildings that will comprise this plant. Orders taken last week by the American Bridge Company included 600 tons for repair work on the ore docks of the Steel Corporation at Duluth, Minn. Of the new Structural enterprises at San Francisco and Seattle there are three or four buildings with a total of 8000 to 10,000 tons that are likely to come to closure before the close of the year. The local mill is well up with its orders, but what with specifications in hand and the

moderate amount of tonnage coming in it is fairly well supplied at present. Prices are unchanged.

**Plates.**—What new demand there is concerns small requirements, no one caring to buy ahead until financial conditions are more settled. With the curtailment of output now going on there will be no overproduction, so that when the demand improves there will be no surplus to unload. Prices from mill and from jobbers' stocks are well maintained and unchanged, notwithstanding the light demand.

**Sheets.**—While the amount of new business coming to the mills is small, specifications against contracts are coming out fairly well. The general output capacity has been largely reduced by the closure or partial operation of a number of important mills, so that production is not overlapping the demand. Store prices are being shaded somewhat, especially on slow moving sizes of both Black and Galvanized. Mill prices are unchanged.

**Bars.**—The Moline, Ill., mill of the Republic Iron & Steel Company did not resume operations at the beginning of last week, as was stated in our last report. It was to have started at that time, but it was decided to defer resumption for the time being. Outside of specifications, which are of moderate volume, not much tonnage is developing in either Iron or Steel Bars. Prices are unchanged and firm on such business as is offered.

**Merchant Pipe.**—The demand for Pipe held on tenaciously for some time after the slackening tendencies began to show in other lines, but it is now no more vigorous than other mill products. Jobbers' stocks, though not larger than usual at this season of the year, are moving slowly and are sufficient to promptly meet all demands. Mill prices are unchanged, and are represented to be firmly held. Store prices are being shaded somewhat for desirable orders.

**Boiler Tubes.**—The completion of shipments against contract has supplied the stocks of Boiler builders with a full assortment of sizes, and therefore new orders are light. The demand from jobbers' stocks consists mainly of small piecing out orders. There is no change in mill prices, and they are, on the whole, well maintained from store.

**Merchant Steel.**—Along with a very moderate run of specifications, there has been some new business taken during the week. The tonnage of the latter is, however, unimportant, except that it showed a slight improvement in the general tone of feeling respecting the situation. There is not much doing in Shafting, though the present discounts, it is said, are generally observed. Quotations are unchanged.

**Cast Iron Pipe.**—At this season of the year municipalities usually begin making up estimates for the Pipe requirements of water works systems. That so few inquiries from this and other sources are received is doubtless due to the widespread expectation of lower prices. In any event the demand is at present limited to pick-up orders. No large lettings are in sight for the immediate future. We quote, per net ton, Chicago, as follows: Water Pipe, 4-in., \$35; 6 to 12 in., \$34; 16-in. and up, \$33, with \$1 extra for Gas Pipe.

**Old Material.**—Scrap continues dull and inactive. The large railroad tonnage that has been dumped on the market within the last two or three weeks has exceeded its absorbent capacity. Some of this tonnage has been disposed of at private sale, but if all of it has been sold it is because prices highly attractive to the buyer were offered. None of the large users of Melting Scrap is accumulating stock, nor are the rolling mills taking on much additional tonnage. If money were easier and more plentiful there would doubtless be a better dealers' market, but under the circumstances these interests are not venturing extensive commitments. The only railroad list offered this week is one of 3600 tons by the Chicago, Burlington & Quincy. We quote, per gross ton, f.o.b. Chicago, as follows:

Old Iron Rails.....	\$16.00 to \$16.50
Old Steel Rails, rerolling.....	13.75 to 14.25
Old Steel Rails, less than 3 ft.....	13.75 to 14.25
Relaying Rails, standard sections, subject to inspection.....	22.50 to 23.00
Old Car Wheels.....	22.00 to 22.50
Heavy Melting Steel Scrap.....	12.00 to 12.50
Frogs, Switches and Guards, cut apart.....	12.00 to 12.50
Mixed Steel.....	9.50 to 10.00

The following quotations are per net ton:

Iron Fish Plates.....	\$14.00 to \$14.50
Iron Car Axles.....	17.00 to 17.50
Steel Car Axles.....	17.00 to 17.50
No. 1 Railroad Wrought.....	11.00 to 11.50
No. 2 Railroad Wrought.....	10.00 to 10.50
Railway Springs.....	11.00 to 11.50
Locomotive Tires, smooth.....	17.00 to 17.50
No. 1 Dealers' Forge.....	9.50 to 10.00
Mixed Bushing.....	7.50 to 8.00
Iron Axle Turnings.....	7.50 to 8.00
Soft Steel Axle Turnings.....	7.50 to 8.00
Machine Shop Turnings.....	7.50 to 8.00
Cast Borings.....	6.00 to 6.50
Mixed Borings.....	6.00 to 6.50
No. 1 Mill.....	7.50 to 8.00
No. 2 Mill.....	6.75 to 7.25
No. 1 Boilers, cut to Sheets and Rings.....	8.00 to 8.50
No. 1 Cast Scrap.....	13.00 to 13.50
Stove Plate and Light Cast Scrap.....	12.50 to 13.00
Railroad Malleable.....	11.50 to 12.00
Agricultural Malleable.....	11.00 to 11.50
Pipes and Flues.....	8.75 to 9.25



**Coke.**—The reduced foundry melt is reflected in a very slow demand for Coke. Only occasional car lots for prompt delivery are being taken. For trade of this sort about \$3 at oven is asked for 72-hr. Connellsville Coke.

**Metals.**—Copper remained practically stationary last week in the local market, and very little business developed. Orders were of a character that plainly indicated a continuance of hand to mouth buying. Other Metals were likewise in slow demand, the market here and elsewhere seeming to wait upon financial improvement. We quote as follows: Casting Copper, 14½¢; Lake, 15½¢, in car lots for prompt shipment; small lots, ¼¢. to ¾¢. higher; Pig Tin, car lots, 34¢; small lots, 34½¢; Lead, Desilverized, 4.60¢. to 4.65¢, for 50-ton lots; Corroding, 5.75¢. to 5.85¢, for 50-ton lots; in car lots, 2¼¢. per 100 lb. higher; Spelter, 5.50¢; Cookson's Antimony, 13¢., and other grades, 12¢. to 12½¢; Sheet Zinc is \$7.50 list, f.o.b. La Salle, in car lots of 600-lb. casks. On Old Metals we quote: Copper Wire, 13¢; Heavy Copper, 13¢; Copper Bottoms, 12¢; Copper Clips, 12¢; Red Brass, 13¢; Yellow Brass, 10½¢; Light Brass, 6½¢; Lead Pipe, 4½¢; Zinc, 4¼¢; Pewter, No. 1, 21¢; Tin Foil, 26¢; Block Tin Pipe, 28¢.

## Pittsburgh.

PARK BUILDING, November 28, 1907.—(By Telegraph.)

**Pig Iron.**—The output of Pig Iron continues to be heavily curtailed and to-day the Carnegie Steel Company has 30 furnaces out of blast, and 6 banked; the Illinois Steel Company has 9 out, the National Tube Company 6, and the American Steel & Wire Company 4. In the two valleys the Shenango Furnace Company has 3 out, Stewart is out, Andrews & Hitchcock at Youngstown have 1 out, and Cherry Valley at Leetonia is out. The only inquiry of any moment in the market for Pig Iron is one from the Grand Crossing Tack Company for 2000 tons of Basic for December and January shipment, on which \$17.50, Valley furnace, or \$19.90, Chicago, has been quoted. There is nothing doing in Bessemer, and we quote it nominally at \$19, Valley furnace, but if there was any tonnage wanted it could probably be bought at \$18, Valley furnace, as there is a good deal of Iron available. There has been a small sale of High Silicon Foundry Iron for prompt shipment on the basis of \$18.50 Valley furnace. We quote Northern No. 2 Foundry at \$18.50 to \$19, Valley furnace, and Northern Forge Iron nominally at \$18, Valley furnace, or \$18.90, Pittsburgh. This price could be shaded on a firm offer.

**Steel.**—There is no new business being placed, and there has been further cutting down in output. The Carnegie Steel Company now has five Steel plants entirely shut down, these being Columbus, Bellaire, Mingo Junction, North Sharon and Donora. The Bessemer plants of the Republic Iron & Steel Company and Youngstown Sheet & Tube Company at Youngstown are also idle this week, but may start on Monday. We quote Bessemer and Open Hearth Billets nominally at \$28, Pittsburgh, and Forging Billets at \$30 to \$31, Pittsburgh.

(By Mail.)

The new business being taken on some lines by leading interests is larger than generally credited. The Steel Corporation is said to be entering orders to the extent of about 50 per cent. of its normal bookings, while other leading Steel interests report that actual orders represent about 35 per cent. of usual tonnage. It is a fact that to-day some finishing mills are closed down, although the companies owning them have enough orders on their books to run for two or three months, but owing to the strenuous financial conditions are not insisting on customers specifying against their contracts, being apprehensive as to payments, but are advising such customers that the tonnage will be held up until conditions are better, and they are in position to take it out and make satisfactory payments for it. The cutting down of the output of Pig Iron, Steel and Finished Material is still going on at this writing. The Steel Corporation has over 50 blast furnaces out of blast or banked, and has also closed a number of its finishing mills. The Republic Iron & Steel Company and Youngstown Sheet & Tube Company have their Bessemer Steel plants idle this week, but expect to start them again December 2. It is estimated that in the Pittsburgh District the Pig Iron output has been reduced about 60 per cent. and Steel output fully 50 per cent. It is confidently believed that just as soon as money conditions are better a quick improvement in the Steel trade will come.

**Ferromanganese.**—The shutting down of so many Steel plants has shut off all demand for Ferro, which has been offered at low prices for some little time. In fact, it has been selling so low that some in the trade believe the bottom of the market has been reached and that higher prices will follow. Several cars of English were sold in this market recently at \$52.40, Pittsburgh, equal to \$50.50, seaboard. We quote the market on English 80 per cent. at \$52.50 to \$53, Pittsburgh.

**Muck Bar.**—Mills rolling Iron Bars that have contracts

placed for Muck Bar are not taking it out. It is said that Muck Bar of the best grade, made from all Pig Iron, has been offered at \$32 and lower, Pittsburgh.

**Skelp.**—The shutdown of a number of Pipe mills has resulted in specifications on contracts being held up. There have been no recent sales on which accurate prices could be based, and we quote nominally as follows: Grooved Steel Skelp at 1.70¢. to 1.75¢; Sheared Steel Skelp, 1.80¢; Grooved Iron Skelp, 1.90¢, and Sheared, 2¢. to 2.10¢, depending on sizes and widths. These prices are f.o.b. maker's mill, and could probably be shaded if any new business was offering.

**Steel Rails.**—An item of interest in the Steel Rail trade is that several leading trunk lines have requested the Carnegie Steel Company to reserve rolling space for them for next year, stating that just as soon as the question of Sections and prices has been decided and the money market is in shape that they can get money to pay for Rails, the contracts will be forwarded. The Carnegie Steel Company will carry over into next year upward of about 400,000 tons, which, under ordinary conditions, would have been shipped out this year. Prices on Light Rails, which are still being cut about \$2 a ton or more by the mills rerolling Rails are as follows: 25 to 45 lb., \$30; 20-lb., \$31; 16-lb., \$32; 12-lb., \$34; 10-lb., \$36, and 8-lb., \$40. We quote Standard Sections at \$28, at mill, and Angle Splice Bars at 1.65¢, at mill.

**Plates.**—Small lots, only for actual needs, are the extent of sales. Some large consumers of Plates having contracts with mills have asked that shipments be held up, as they are not in a position to take in the tonnage and make satisfactory arrangements for payments. There is no trouble in getting prompt deliveries on both Universal and Sheared Plates, some of the mills being short of work. Prices, in the main, are being maintained. We quote: Tank Plates, ¼-in. thick, 6¼ in. up to 100 in. wide, 1.70¢, base, at mills, Pittsburgh. Extras over this price are as follows:

	Extra per 100 lb.
Gauges lighter than ¼-in. to and including 3-16-in.	
Plates on thin edges.....	\$0.10
Gauges Nos. 7 and 8.....	.15
Gauge No. 9.....	.25
Plates over 100 to 110 in.....	.05
Plates over 110 to 115 in.....	.10
Plates over 115 to 120 in.....	.15
Plates over 120 to 125 in.....	.25
Plates over 125 to 130 in.....	.50
Plates over 130 in.....	1.00
All sketches (excepting straight taper Plates varying not more than 4 in. in width at ends, narrowest end being not less than 30 in.).....	.10
Complete Circles.....	.20
Boiler and Flange Steel Plates.....	.10
"A. B. M. A." and ordinary Firebox Steel Plates.....	.20
Still Bottom Steel.....	.30
Marine Steel.....	.40
Shell grade of steel is abandoned.	

**TERMS.**—Net cash 30 days. Pacific Coast base, 1.60¢, f.o.b. Pittsburgh, with all rail tariff rate of freight to destination added, no reduction for rectangular shapes, 14 in. wide down to 6 in. of Tank, Ship or Bridge quality.

**Structural Material.**—The only large work in sight is the Memorial Building, about 1500 tons, bids on which went in Monday. There will likely be some keen competition to secure this contract. We quote: Beams and Channels, up to 15 in., 1.70¢; over 15 in., 1.80¢; Angles, 3 x 2 x ¼ in. thick, up to 6 x 6 in., 1.70¢; 8 x 8 and 7 x 3½ in., 1.80¢; Zees, 3 in. and larger, 1.70¢; Tees, 3 in. and larger, 1.75¢; Bulb Angles and Deck Beams, 2¢. Under the Steel Bar card Angles, Channels and Tees under 3 in. are 1.70¢, base, for Bessemer and Open Hearth, subject to half extras on the Standard Steel Bar card.

**Sheets.**—New business is mostly in small lots for actual needs. The material reduction effected in output of Sheets, it is believed, will prevent any large accumulation of stocks. The market is fairly strong, but prices on the lighter gauges of Black Sheets are sometimes shaded to the extent of about \$2 per ton. Regular prices are as follows: Blue Annealed Sheets, No. 10 gauge and heavier, 1.85¢; Nos. 11 and 12, 1.90¢; Nos. 13 and 14, 1.95¢; Nos. 15 and 16, 2.05¢; Box Annealed, Nos. 17 to 21, 2.35¢; Nos. 22 to 24, 2.40¢; Nos. 25 and 26, 2.45¢; No. 27, 2.50¢; No. 28, 2.60¢; No. 29, 2.75¢; No. 30, 2.85¢. We quote Galvanized Sheets as follows: Nos. 10 and 11, 2.65¢; Nos. 12 and 14, 2.75¢; Nos. 15 and 16, 2.85¢; Nos. 17 to 21, 3¢; Nos. 22 and 24, 3.15¢; Nos. 25 and 26, 3.35¢; No. 27, 3.55¢; No. 28, 3.75¢; No. 29, 4¢, and No. 30, 4.25¢. We quote No. 2 gauge Painted Roofing Sheets at \$1.85 per square, and Galvanized Roofing Sheets, No. 28 gauge, \$3.25 per square, for 2-in. corrugations. These prices are for carload lots, jobbers charging the usual advances.

**Tin Plate.**—Little new tonnage is being placed, and the output of Tin Plate by the leading interests and by the outside mills has been reduced fully 50 per cent. or more. Should money conditions improve and confidence in the future return, it is believed a very heavy buying movement in Tin Plate will result as stocks of jobbers all over the country are very light. We quote \$3.90 for 100-lb. Cokes, 14 x 20, f.o.b. Pittsburgh, terms 30 days, less 2 per cent. off for cash in 10 days.



**Iron and Steel Bars.**—A number of the leading mills are closed for lack of orders. Specifications against contracts are coming in slowly, although in the last few days they have shown some improvement. Prices on Steel Bars are being strictly maintained, but Iron Bars are lower. We quote Steel Bars at 1.60c., base, Pittsburgh, and Iron Bars at 1.60c., Pittsburgh, either for delivery in the Pittsburgh District or for Western shipment. One or two mills, whose tonnage is insignificant, are offering Iron Bars about \$1 a ton lower than the above price, but demand cash against bill of lading, and this condition makes sales practically prohibitory.

**Spelter.**—Prices have again declined to the lowest figure reached this year, and there is practically no business to be had. We quote prime grades of Western Spelter at \$4.80, St. Louis, equal to \$4.92½, Pittsburgh.

**Hoops and Bands.**—Specifications against contracts are light. In the face of a stagnant demand we are advised that prices are being maintained. We quote Steel Hoops, 2c., and Bands for all purposes at 1.60c., base, half extras as per Standard Steel card. These prices are for carload lots, f.o.b. Pittsburgh, plus full tariff rail rate to point of delivery, an advance of \$2 a ton being charged for less than carloads.

**Spikes.**—A fair tonnage is being placed in the smaller sizes, but the demand for Railroad Spikes is stagnant. We quote Railroad Spikes at \$1.90 to \$1.95, and the smaller sizes at \$2.05 to \$2.10 per 100 lb., f.o.b. Pittsburgh.

**Merchant Steel.**—Specifications against contracts are not coming in, with the result that much work is held up. Several of the leading makers have closed down their mills and are operating others light. The Republic Iron & Steel Company in October made the largest tonnage of Shafting in any one month in its history. We quote: Cold Rolled Shafting at 54 per cent. off in large lots and 48 per cent. off in carload lots, delivered in base territory; Smooth Finished Machinery Steel, 1.85c. to 2c., depending on quality; Flat Sleigh Shoe, 1.65c. to 1.75c.; Cutter Shoe, 2.15c. to 2.20c.; Toe Calk Steel, 2.10c. to 2.15c.; Railroad Spring Steel, 1.75c. to 1.80c.; Crucible Tool Steel, 6c. to 8c. for ordinary grades, and 10c. and upward for special grades.

**Merchant Pipe.**—New demand is light and several leading mills are shut down this week waiting for orders to accumulate to warrant starting again. In most cases where actual tonnage is placed buyers insist on prompt shipments, and this is evidence that stocks are light. The Pipe manufacturers are in perfect accord and will work together to prevent cutting in prices and piling up stocks for which there is no demand. This will be accomplished by shutting down mills and reducing the output to meet actual demand. Prices are being strictly maintained, the net discount on Steel Pipe to the large trade remaining at 74 and 5 per cent. off list. Prices on Iron Pipe are still being shaded to the extent of about 3 points or \$6 a ton. Discounts on Steel Pipe are as follows:

*Merchant Pipe.*

	Jobbers, carloads.	
	Black.	Galv.
¾ to 1¼ in.....	.65	.79
¾ in.....	.67	.53
1½ in.....	.69	.57
¾ to 6 in.....	.73	.63
7 to 12 in.....	.70	.55
Extra strong, plain ends:		
1½ to ¾ in.....	.58	.46
1½ to 4 in.....	.65	.53
4½ to 8 in.....	.61	.49
Double extra strong, plain ends:		
1½ to 8 in.....	.54	.43

To the large trade all above discounts are subject to 1 point on the base, and 5 per cent. on the net.

Discounts on Iron Pipe, which are shaded 3 points or \$6 a ton, are as follows, f.o.b. Pittsburgh:

*Standard Genuine Iron Pipe.*

	Black.	
	Black.	Galv.
¾ to 6 in.....	.67	.67
1½ in.....	.62	.50
¾ in.....	.60	.42
1½ and ¼ in.....	.58	.42
7 to 12 in.....	.62	.47
Extra Heavy Iron Pipe, Plain Ends.		
1½, ¾ and ¾ in.....	.62	.40
1½ to 4 in.....	.59	.47
4½ to 8 in.....	.55	.42

**Boiler Tubes.**—There is a fair demand for Merchant Tubes, but practically no new business is being placed in Railroad Tubes, prices on the latter being somewhat demoralized. Discounts on Merchant Tubes are as follows:

*Boiler Tubes.*

	Iron.	
	Iron.	Steel.
1 to 1½ in.....	.42	.47
1½ to 2¼ in.....	.42	.59
2¼ in.....	.47	.61
2½ to 5 in.....	.52	.65
6 to 13 in.....	.42	.59
2¼ in. and smaller, over 18 ft. long, 10 per cent. net extra.		
2½ in. and larger, over 22 ft. long, 10 per cent. net extra.		

**Coke.**—Restriction in output in the Coke trade is still the order of the day, and ovens are being blown out at a

pretty rapid rate. The H. C. Frick Coke Company has blown out about 60 per cent. of its ovens, and independent Coke operators have cut down their output fully 50 per cent., and it will be still further reduced, as there is no demand whatever for Furnace Coke, while shipments are being shut off in every direction, on account of the blowing out of so many blast furnaces. There is no market price on Furnace Coke, which could probably be obtained as low as \$2 per ton, if there was any demand for it. Connellsville 72-hr. Foundry Coke is ranging in price from \$2.50 to \$2.75 per ton, at oven.

**Iron and Steel Scrap.**—Any sales of Scrap that are being made are at such prices as consumers care to pay. Heavy Steel Scrap is said to have been offered on a basis of \$14, Pittsburgh, and declined. Nominal prices, which could be shaded \$1 or more a ton on a firm offer, are made by dealers as follows: Heavy Steel Scrap, for Sharon, Pittsburgh or Steubenville delivery, \$14.50; Bundled Sheet Scrap, \$12.50 to \$13; No. 1 Railroad Wrought Scrap, \$15; No. 2, \$14.50; Re-rolling Rails, \$15 to \$15.25; No. 1 Cast Scrap, \$16 to \$16.50; Cast Iron Borings, \$8 to \$8.50; Old Steel Rails, short pieces for Open Hearth use, \$14.50; Low Phosphorus Melting Stock, \$18.50 to \$19; Steel Axles, \$20 to \$20.50; Iron Axles, \$24 to \$24.50; No. 1 Busheling Scrap, \$14; No. 2, \$11; Old Car Wheels, \$21 to \$21.50; Standard Sheet Bar Crop Ends, \$17.50 to \$18; Grate Bars, \$14; Stove Plate, \$13, net ton. All above prices are per gross ton, f.o.b. Pittsburgh, except Stove Plate, which is usually sold by the net ton.

T. A. Arthur, formerly with Banning, Cooper & Co., Iron and Steel factors, Lewis Building, Pittsburgh, is now connected with the Pittsburgh office of Hickman, Williams & Co., Pig Iron and Coke, German National Bank Building, T. Coleman Ward, resident manager.

The Schoen Steel Wheel Company, McKees Rocks, Pittsburgh, has established a general sales office in the Farmers' Bank Building, Pittsburgh, with W. M. Johnson, second vice-president and manager of sales, in charge. Mr. Johnson will also spend part of his time in the New York office, which has just been established in the Bowling Green Building. J. T. Milner has been appointed Western sales agent, with headquarters in the Fisher Building, Chicago.

## Philadelphia.

PHILADELPHIA, PA., November 26, 1907.

Buying in almost every line continues in the hand to mouth fashion which has prevailed for the last three or four weeks, and there seems to be no inclination either on the part of buyer or seller to do business on any other basis under existing conditions. The financial situation seems to be improving, however, and there is a somewhat better undertone to general business affairs. The scarcity of currency is relaxing, and a return to a more normal financial condition in the near future is anticipated. Until this becomes an established fact transactions will continue to be on a very conservative basis, notwithstanding the expressed belief that the general business of the country is on a perfectly sound basis. In some few directions indications of improvement can already be seen, inquiries being somewhat better, but buyers are not yet ready to do much for deliveries beyond the end of the year.

**Pig Iron.**—There has been a little more inquiry for some grades of Pig Iron, and while the orders placed have been mostly for small tonnages, the feeling in the trade is a shade better. Foundrymen who have not contracted for their full requirements for the year are asking prices on small lots, while an inquiry for a round lot of Basic Iron for December and January delivery has come out. As a rule, however, sales have been confined to lots ranging from carloads up to a few hundred tons, practically all for early delivery. Curtailment, both in consumption and production, continues. Some of the larger consumers who had covered for their requirements for the year have held up deliveries and are now working to reduce their stocks. The smaller consumers, however, and such of the larger ones as have not fully covered their needs have but light stocks on hand, and it is from this class of buyers that the bulk of current business comes. Pig Iron production has been further curtailed, and some further blowing out of furnaces in this territory is to be noted, while additional stacks, some badly in need of repairs, will be blown out early in the coming month. Stocks on the furnace banks are small, but there will probably be some little accumulation of Iron due to requests for the withholding of shipments on the part of some customers. Prices in most grades are a shade lower. In fact, in many cases there has been hardly enough business done to establish a price, particularly inasmuch as individual features enter into consideration in almost every sale made. The market on the whole cannot be said to be weak, but some furnaces appear to be willing to take a little less than others for the same grades of Iron, which may be due to several causes, the principal one being most likely the fact that some still have high priced contracts on which they are making deliveries and on which they are able to even up. Generally

speaking, Foundry Irons continue the most active, the number of sales being larger than in any other grades. Prices may be said to range from \$18.75 to \$19.25, delivered, and it is not improbable that these could be slightly shaded if a good round tonnage came out. More interest has been shown in Basic Iron, one buyer being in the market for 5000 tons for delivery the next two months, and while it is a little uncertain at what price this business can be done, it will probably be close to \$17.50, delivered, as we understand Iron has been offered at that figure. Forge Irons have not been in much demand. Some inquiry is reported, but sales range mostly in the neighborhood of 100-ton lots. One lot of 500 tons was sold at \$17, delivered. Prices vary from \$16.50 to \$17.50, according to the grade. A little business has been done at lower prices in Low Phosphorus Iron. While there is some demand for misfit Irons of this grade, no sales have been made and prices vary according to analysis. Under the circumstances quotations are more or less nominal and range about as follows for delivery in buyers' yards, eastern Pennsylvania and adjoining territory, during the remainder of the year:

No. 2 X Foundry.....	\$18.75 to \$19.25
Gray Forge.....	16.50 to 17.50
Basic.....	17.50 to 17.75
Low Phosphorus.....	25.00 to 25.50

**Ferromanganese.**—The demand is extremely light. Large buyers are not in the market and the smaller ones are hard to interest. A few small sales for prompt delivery have been made, but there is absolutely no disposition to do business for next year. Prices for this year's delivery are named at \$50, Baltimore, or about \$51, delivered in this territory.

**Steel.**—New business is extremely light, and mills are running on about half time. Specifications on old orders are small and cover only immediate needs of buyers. Prices are nominally unchanged, \$30 to \$31 being named for Ordinary Steel, and \$33 to \$35 for Forging Steel, but these could be materially shaded if some good business was offered. As a rule, however, price is not considered a very important feature at the time, as customers could hardly be induced to buy in any large tonnage under existing circumstances, even if prices were materially lower.

**Plates.**—There has been a little better demand for Plates. Orders booked vary from small lots up to several hundred tons, and mills, while not running full, average a fairly even volume of business. There is some good business in sight, particularly in Ship Plates, the requirements for two good-sized vessels being expected to come out this week. Prices are being well maintained and range about as follows:

	Part	Carload.	carload.
	Cents.	Cents.	Cents.
Tank, Bridge and Boat Steel.....	1.85	1.90	
Flange or Boiler Steel.....	1.95	2.05	
Commercial Firebox.....	2.05	2.10	
Marine.....	2.25	2.30	
Locomotive Firebox Steel.....	2.35	2.40	
The above are base prices for ¼-in. and heavier.			
ing extras apply:			
3-16-in. thick.....		\$0.10	
Nos. 7 and 8, B. W. G.....		.15	
No. 9, B. W. G.....		.25	
Plates over 100 to 110 in.....		.05	
Plates over 110 to 115 in.....		.10	
Plates over 115 to 120 in.....		.15	
Plates over 120 to 125 in.....		.25	
Plates over 125 to 130 in.....		.50	
Plates over 130 in.....		1.00	

**Structural Material.**—Orders for Structural Material, which had fallen off slightly, caught up fairly well during the week just closed, and while the tonnage taken was not large, it was generally considered satisfactory under the circumstances. Business continues to be largely of a miscellaneous character, there being little Structural work of any magnitude before the trade in this territory at the time. Prices are firm and range from 1.85c. to 2c., according to specification.

**Bars.**—Business continues light and mills are not running much over half their capacity. Unless the demand falls off to a greater extent, it is believed that mills will continue to be operated on reduced time, rather than shut down. Prices continue to be nominally held at 1.75c. to 1.80c. for Best Refined Iron Bars, with very little new business coming out. Steel Bars are quoted at the same price and can be had fairly promptly.

**Sheets.**—The demand for Sheets shows no improvement. Orders are coming in slowly, buyers covering only for their immediate needs. Mills, as a rule, are running on short time. Prices are unchanged, as makers do not believe any decrease would result in increased business. For mill shipments the following quotations are named, a tenth extra being quoted for small lots: Nos. 18 to 20, 2.80c.; Nos. 22 to 24, 2.90c.; Nos. 25 to 26, 3c.; No. 27, 3.10c., and No. 28, 3.20c.

**Old Material.**—Mills are not buying, and no business of any moment is being done, except between brokers. Prices in some grades have, under the circumstances, declined still further, and what little buying there is has been for spot delivery only. Quotations are extremely difficult to name,

owing to the nature of the business being done, and bids and offers for prompt delivery in buyers' yards are nominally as follows:

No. 1 Steel Scrap and Crops.....	\$12.00 to \$12.50
Low Phosphorus.....	14.00 to 16.50
Old Steel Axles.....	18.50 to 19.00
Old Iron Axles.....	23.00 to 24.00
Old Iron Rails.....	17.50 to 18.00
Old Car Wheels.....	19.00 to 20.00
Choice No. 1 R. R. Wrought.....	15.00 to 15.50
Machinery Cast.....	16.00 to 16.50
Wrought Iron Pipe.....	12.50 to 13.00
No. 1 Forge Fire Scrap.....	11.50 to 12.00
No. 2 Light Iron.....	8.50 to 9.00
Wrought Turnings.....	9.50 to 10.00
Stove Plate.....	13.00 to 13.50
Cast Borings.....	8.00 to 8.50
Grate Bars.....	13.50 to 14.00

The arrangement which for some time has existed between the Logan Iron & Steel Company, Philadelphia, and Harrington, Robinson & Co., Boston, for selling the product of the former in New York State and New England has expired, and the company's product will not hereafter be handled by the house mentioned.

## Cincinnati.

CINCINNATI, OHIO, November 28, 1907.—(By Telegraph.)

In Pig Iron agency circles the feeling is a bit more hopeful, occasioned by an increase in inquiry, and in the main collections are a trifle easier. In finished lines the depression in money markets has left its impression, and the buying from stores is of the hand to mouth order, while the Scrap market is practically dead. The banks are showing a disposition to retire the scrip issued a few weeks ago, and consumers of Iron who had purchased for last quarter deliveries and who became panicky a few weeks ago and negotiated for cancellations or extensions of time are evidencing a disposition to temporize. There seems to be as yet no confirmed tendency to cut prices in machinery lines, although the condition would suggest a temptation. While the manufacturers of lathes have felt the depression probably more than manufacturers of other lines of tools, conditions with these lines have not as yet brought about any slaughtering of prices. In some other classes, particularly shapers, milling machines, punching and shearing machinery and pumping machinery, the demand is slowly but surely gaining and the outlook, therefore, for the makers of castings has correspondingly improved. Reports from Coke regions indicate a still further curtailment of product and a weakening of prices. Furnaces are busy shipping Iron on contract, and it is the negotiation between furnaceman and consumer that furnishes much of the gossip as to panicky prices. There is no question that much of the Iron now in transit is being diverted and resold, and it is this condition which makes it difficult to fix the market for the last quarter. As to next year, there is a small accumulation of inquiries, but they are, for the most part, merely feelers.

**Pig Iron.**—Transactions for the week have been, for the most part, carload lots and for urgent needs. There is a further weakening in price, and while \$15.50 may be quoted as a fair price for No. 2 Southern Foundry, at furnace, it is reasonably certain that \$15 could be done on a tonnage of any size. There is admittedly considerable resale iron going, and the negotiations on this have hammered the price and promise to affect it still more before the close of the year. As for next year the reluctance of furnaces to quote is as marked as a few weeks or two months ago, but some figures upon which to base a movement for the first quarter are likely to be forthcoming within a few days for furnaces are figuring on requirements aggregating quite a respectable tonnage. One inquiry is from a large melter in Michigan, whose business, agricultural implements, has not been affected by the times, and who is presumably getting ready for some South American and Australian business. The inquiry is for 1500 to 2500 tons of No. 2 Foundry for the first four months of 1908. Another is from Mansfield, Ohio, for 1000 tons for the first six months. A prominent local sales agency has inquiries on hand aggregating 4000 tons for the early months of next year, as against not a single one last week. Although the prevailing impression is that there is a minimum closely approximating \$14, below which it would be physically impossible to go, because of the increased cost of labor, &c., which would bring about a wholesale blowing out of Southern furnaces, it is still the verdict in some authoritative quarters that that is about the figure which will rule for first quarter Iron. The quoted price of \$18.50, at furnace, for Northern No. 2 has been shaded apparently from 25c. to 50c., although most furnaces in the Hanging Rock and Valley districts are said to be holding rather firm at \$18.50. Some very good bargains, it is rumored, have been made by a few melters who needed high grade Iron for immediate delivery, but those shipments have been of small tonnage, and furnaces have required 90 to 95 per cent. of the cash on receipt of bill of lading. There is practically nothing available upon which to base a price for



the low grade. There is none selling, and it is practically a buyers' market in Forge and Mottled. For the balance of 1907 we quote f.o.b. Cincinnati, in which are figured freight rates from Birmingham \$3.25, and from the Hanging Rock District \$1.20, as follows:

Southern Coke, No. 1.....	\$19.25 to \$19.75
Southern Coke, No. 2.....	18.75 to 19.25
Southern Coke, No. 3.....	18.25 to 18.75
Southern Coke, No. 4.....	17.25 to 17.75
Southern Coke, No. 1 Soft.....	19.25 to 19.75
Southern Coke, No. 2 Soft.....	18.75 to 19.25
Southern Coke, Gray Forge.....	16.25 to 16.75
Southern Coke, Mottled.....	16.00 to 16.50
Ohio Silvery, 8 per cent. Silicon.....	27.20 to 27.70
Lake Superior Coke, No. 1.....	19.70 to 20.20
Lake Superior Coke, No. 2.....	19.20 to 19.70
Lake Superior Coke, No. 3.....	18.70 to 19.20

#### Car Wheel Irons.

Standard Southern Wheels.....	\$28.25 to \$29.25
Lake Superior Car Wheels.....	27.70 to 28.00

**Coke.**—The Coke market is weaker, with a still further tendency to curtail production. About all the business going is that furnished earlier in the year on contract, which is easily taken care of by the comparatively few ovens now in blast. Connellsville Foundry is quotable at \$2.90 to \$3, and Furnace at \$2.35 to \$2.50, at oven. Reports from Connellsville Coke districts show the blowing out of ovens continuing, and it is said that many producers in the New River District will follow suit.

**Finished Iron and Steel.**—Buying from stores is still of a hand to mouth character, and little of that. Consumers are taking from stores Iron and Steel on contracts that formerly warranted them in ordering in carload lots directly from mills, and it is this feature of the trade that has kept dealers fairly busy during the depression. Bars are in fair demand, and dealers are still busy filling old orders on Sheets. Prices are being well maintained. Dealers quote, f.o.b. Cincinnati, as follows: Iron Bars, carload lots, 1.80c., with half extras; small lots from store, 1.90c., base, full extras; Steel Bars, carload lots, 1.75c., base, half extras; small lots from store, 1.90c., base, full extras; Base Angles, carload lots, 1.75c.; small lots from store, 2.10c.; Beams, Channels and Structural Angles, 1.85c., base; small lots from store, 2.10c.; Plates, 1/4-in. and heavier, carload lots, 1.95c.; small lots from store, 2.20c.; Sheets, No. 16, carload lots, 2.20c.; small lots from store, 2.50c.; No. 14, carload lots, 2.10c.; small lots from store, 2.40c.; Steel Tire, 4-in. or heavier, carload lots, 1.95c., base; Plates, 3-16 and No. 8, carload lots, 2c.; small lots from store, 2.25c.; Sheets, No. 10, 2c., carload lots; 2.30c. from store; Sheets, No. 12, 2.05c., carload lots; 2.40c. from store; Light Sheets, Black, No. 28, carload lots, 2.75c.; Galvanized, No. 28, 3.90c.

**Old Material.**—There is still nothing doing in Scrap, and dealers, save those who may be filling specifications, are paying little attention to the market. The following prices are given as the best obtainable and are f.o.b. Cincinnati:

No. 1 Railroad Wrought, net ton.....	\$12.00 to \$13.00
Cast Borings, net ton.....	6.00 to 6.50
Steel Turnings, net ton.....	7.50 to 8.00
No. 1 Cast Scrap, net ton.....	14.00 to 14.50
Burnt Cast and Wrought, net ton.....	9.00 to 9.50
Old Iron Axles, net ton.....	19.00 to 20.00
Old Iron Rails, gross ton.....	16.50 to 17.00
Old Steel Rails, long, gross ton.....	13.00 to 13.50
Relaying Rails, 56 lb. and up, gross ton.....	22.00 to 23.00
Old Car Wheels, gross ton.....	19.50 to 20.00
Mining Car Wheels, gross ton.....	10.50 to 11.50
Low Phosphorus Scrap, gross ton.....	16.00 to 16.50

## Birmingham.

BIRMINGHAM, ALA., November 25, 1907.

**Pig Iron.**—No change in market conditions can as yet be noted. Curtailment of production continues wherever order books will admit, and it is evident that when the buying movement commences very little Iron will be found on furnace yards. Quite a number of inquiries are reported as to requirements for 1908, but in each case there has been no evidence of interest other than to feel the market, and former quotations are being made, although it is generally conceded that quotations are not a criterion of prices anticipated. Just what prices will be in existence when the market is again active is problematic; but in view of the opportunity offered for an adjustment of labor conditions by recent retrenchment in all manufacturing lines, it is highly probable that operating cost will be materially reduced, and it is believed that such a reduction is imperative before lower selling prices can be expected. The tonnage sold during the week has been small, and transactions reported are of such a nature that a definite statement as to the market price of spot Iron is hardly warranted. It is believed, however, that on a firm demand the former quotation of \$16.50 on a No. 2 Soft basis, with a differential of \$1 per ton for lower grades, would be about the market. Very little resale Iron is now in evidence, and it is not believed that additional offerings will be made. With the blowing out of the two City Furnaces of the Sloss Sheffield Steel & Iron Company and the Trussville Furnace of the Southern Steel Company in the coming week, only 17 stacks will be left in blast

in this district. Of this number 11 are making merchant Iron, and with one probable exception order books will not likely admit of further curtailment within the next 30 days. Six furnaces are now on Basic Iron, but it is authentically stated that this number will be decreased at an early date.

**Cast Iron Pipe.**—It is learned that a contract for something like 3000 tons of Water Pipe, for the city of Atlanta, Ga., has been awarded the United States Cast Iron Pipe & Foundry Company, and will be furnished by one of its Southern plants. This is the only tonnage of consequence placed in this district for some time, and with the exception of lettings for Tucson and Phoenix, Ariz., no new business is yet in sight. The attitude of awaiting developments is more in evidence and but few inquiries are reported. Some curtailment of production is to be noted, but orders received for small lots aggregate quite a tonnage, and it is not predicted that suspension of operation will result in any case. Prices have been reduced materially the past week and revised quotations on small lots of Water Pipe, per net ton, f.o.b. cars here, are about as follows: 4 to 6 in., \$30; 8 to 12 in., \$29; over 12-in. average, \$26, with \$1 per ton extra for Gas Pipe. These prices would no doubt be shaded on a large municipal contract.

**Old Material.**—The market continues dull. Sales for immediate consumption continue to be made, but no provisions for requirements during 1908 are yet reported. The attitude of awaiting developments, which is so prevalent in other markets, is very much in evidence in this line, and it is not predicted that any buying of consequence will be done until general conditions have been adjusted. Prices are unchanged and dealers' quotations are about as follows, per gross ton, f.o.b. cars here:

Old Iron Rails.....	\$22.00 to \$22.50
Old Iron Axles.....	18.50 to 19.00
Old Steel Axles.....	17.00 to 17.50
Old Car Wheels.....	20.50 to 21.00
No. 1 Railroad Wrought.....	17.50 to 18.00
No. 2 Railroad Wrought.....	13.00 to 13.50
No. 1 Country Wrought.....	14.50 to 15.00
No. 2 Country Wrought.....	12.00 to 12.50
Wrought Pipe and Flues.....	13.50 to 14.00
Railroad Malleable.....	14.00 to 14.50
No. 1 Steel.....	13.50 to 14.00
No. 1 Machinery Cast.....	14.25 to 14.75
Stove Plate and Light Cast.....	10.25 to 10.75
Cast Borings.....	7.75 to 8.25

## Cleveland.

CLEVELAND, OHIO, November 26, 1907.

**Iron Ore.**—The Ore market situation presents a striking contrast as compared with a year ago. Last year the furnace interests began to buy their Ore for this year's delivery the first week in November, and by December 1 the shippers had sold all their better grades of Ore. This year the furnacemen have as yet shown no interest in 1908 Ore, with the exception of one or two, who have asked that reservations be made for them, and it is not expected that a buying movement will start before the beginning of the year. Shippers are not anxious over the situation and are content to let the consumers take their time about coming into the market. As far as next year's prices are concerned, the matter has not yet been seriously considered. There is a feeling that in view of the present industrial conditions prices will be slightly reduced, but shippers are disposed to keep prices pretty closely to those of this season, some saying that they would leave the Ore in the ground rather than mine and ship it at much reduced prices. Some of the Ore shippers have loaded their last cargoes at the head of the lakes and most of them will clean up by the end of the week. The last boats of the Pittsburgh Steamship Company to load Ore left for upper lake ports two or three days ago and the Steel Corporation expects to load its last cargoes Saturday. Last year Ore shipments in December exceeded 500,000 tons, but the shipments next month will be much less than that. Nearly all the Ore is being loaded on the docks, and boats are being delayed considerably waiting to unload their cargoes. Prices are as follows at Lake Erie docks, per gross ton: Old Range Bessemer, \$5; Mesaba Bessemer, \$4.75; Old Range Non-Bessemer, \$4.25; Mesaba Non-Bessemer, \$4; Siliceous Bessemer, \$2.75; Siliceous Non-Bessemer, \$2.35 to \$2.60.

**Pig Iron.**—While there has been no improvement in the market as far as actual sales are concerned, a few good inquiries have appeared. Two inquiries are reported for Basic Iron for early December delivery, one for 1000 tons and the other for 1000 to 2000 tons. The other inquiries were for three lots of No. 2 Northern Foundry, aggregating 2500 tons, for the first quarter and first half of 1908 delivery. A price of \$20, or, perhaps, \$19.50, will be quoted. The present consumption of Iron by foundries in this territory is very light and there are few consumers who have not asked shipments withheld. While the demand for spot Iron has not improved, a few sales in small lots are noted at \$19.50 and \$20, Toledo, and a local interest reports several sales at \$18.50, for No. 2, at western Pennsylvania furnace, and this price would be shaded to \$18 for a fair sized order. Furnace No. 1 of Pickands, Mather & Co., at Toledo, will



be blown out November 29, and the River Furnace of the Upson Nut Company, Cleveland, will bank for about two weeks in December for necessary repairs. Local furnaces have as yet accumulated no surplus Iron. While no buying movement for next year is expected until present conditions mend considerably, an improvement in the demand is expected during December for January consumption. Quotations for the balance of the year, f.o.b. Cleveland, are as follows:

Bessemer .....	\$20.90
Northern Foundry, No. 1 .....	20.00
Northern Foundry, No. 2 .....	19.50
Northern Foundry, No. 3 .....	19.00
Southern Foundry, No. 2 .....	\$20.35 to 20.85
Gray Forge .....	18.90

**Coke.**—The market is very quiet, there being practically no demand for either Furnace or Foundry Coke. Prices are weak, and quotations are largely nominal. We quote Connellsville Furnace Coke for spot shipment at \$2.35 to \$2.50, at oven, and 72-hr. Foundry Coke at \$3 to \$3.25, at oven.

**Finished Iron and Steel.**—While no improvement is noted as yet, either in specifications on contracts or in new business, a decidedly better feeling prevails and confidence is gradually returning. The financial situation has become considerably easier and collections are better. Local bankers have made arrangements to issue clearing house checks next week to replace the bank checks that have been used as a medium of circulation since the acute financial stringency appeared, and these are expected to afford further relief. The situation may have improved sufficiently by the end of the week, however, that it will be deemed unnecessary to issue these checks. That the financial situation has greatly improved is shown by the fact that a few industrial plants were able to pay their workmen in currency last Saturday. While there is very little pessimistic feeling, the general opinion is that the improvement in business conditions will come quite gradually, and that the volume of business in the Iron and Steel trade will be quite limited until the first of the year. Traveling salesmen report that they could pick up quite a little business now if they went after it, but mills are following a conservative policy in view of the financial stringency and are not sending their men out. An improvement in the demand for Structural Material is noted, several orders for 100 and 200 lots on contracts having come in during the week. Among the new orders was one for 150 tons of Plates for railroad bridge work. In spite of the present financial condition, the situation as far as it related to the agricultural implement makers is entirely satisfactory. Implement makers continue to specify freely on contracts, and those who sent in large specifications before the financial disturbance have given no withhold orders. The Empire Rolling Mills, Cleveland, which were shutdown temporarily, are again in operation with a fair amount of orders on hand. The Bar Iron situation shows some improvement, prices now being firmly maintained. No price cutting is reported in any line, with the exception of Sheets. We quote Steel Bars at 1.70c., Cleveland, for carload lots, half extras, and Iron Bars at 1.60c., Cleveland, for outside business, and 1.70c. for local orders. We quote Beams and Channels at 1.80c., base, Cleveland. We quote Plates, 1/4-in. and heavier, 1.80c., base, Cleveland. Concessions of \$2 a ton on Black Sheets and \$1 per ton on Galvanized Sheets are being made. Regular prices on mill shipments of Sheets, carload lots, Cleveland, are as follows: Blue Annealed, No. 10, 1.95c.; Box Annealed, No. 28, 2.70c.; Galvanized, No. 28, 3.85c. Warehouse prices on Sheets are as follows: Blue Annealed, No. 10, 2.30c.; Box Annealed, No. 28, 3.05c.; Galvanized, No. 28, 4.05c. Other warehouse prices are unchanged, and jobbers' business is light. We quote Steel Bars out of stock at 1.90c. to 1.95c., and Iron Bars at 1.95c. to 2c. Beams and Channels out of stock are 2.10c. to 2.15c., base. Warehouse prices on Boiler Tubes, 2 1/4 to 5 in., are 64 per cent. discount, and on Black Merchant Iron Pipe, base sizes, 67 per cent. discount.

**Old Material.**—There is no improvement in the demand and prices are weaker, several grades being \$1 a ton lower. There have not been enough sales to establish a market price, many quotations being merely nominal. Dealers and others with Scrap on their hands that they were anxious to dispose of have been able to move it only by letting it go at unusually low prices, and price has been no object to mills that did not have early need of the material offered. With the local mills running light, there is practically no local demand, and the outside demand is not much better, although a few sales are being made in small lots for immediate needs. Foundries are running at reduced capacity and are buying no Scrap, having enough on hand for present needs. Little improvement in the market is expected before the first of the year. Dealers' prices to the trade, per gross ton, f.o.b. Cleveland, are as follows:

Old Steel Rails .....	\$13.50 to \$14.00
Old Iron Rails .....	19.00 to 19.50
Steel Car Axles .....	18.00 to 19.00
Old Car Wheels .....	19.00 to 20.00
Relaying Rails, 50 lb. and over .....	27.50 to 28.00
Relaying Rails, under 50 lb. ....	30.00 to 31.00
Heavy Melting Steel .....	12.50 to 13.00
Railroad Malleable .....	14.00 to 15.00
Agricultural Malleable .....	13.00 to 13.50
Light Bundled Sheet Scrap .....	10.00 to 11.00

The following quotations are per net ton, f.o.b. Cleveland:

Iron Car Axles .....	\$20.50 to \$21.00
Cast Borings .....	7.00 to 7.50
Iron and Steel Turnings and Drillings ..	7.50 to 8.50
Steel Axle Turnings .....	11.50 to 12.00
No. 1 Rushelling .....	11.00 to 11.50
No. 1 Railroad Wrought .....	13.50 to 14.00
No. 1 Cast .....	14.00 to 14.50
Stove Plate .....	12.50 to 13.00
Bundled Tin Scrap .....	10.00

## The Coal Trade.

BY FREDERICK E. SAWARD.

The Coal trade is confronted at the present moment with an entirely different proposition from the situation when the last report was made for *The Iron Age*. It is one of its peculiarities that there are three view points or conditions which have a bearing upon this trade when the entire field is considered. The Anthracite trade is divided into two sections, it may be said, and no great disturbance to either is to be looked for. There is the domestic use, in which no diminution of consumption is expected as the great winter demand is approaching. Then come the steam sizes, and even in these no diminution is looked for; in fact, one company has already increased its rate for Pea Coal 25 cents a ton. The multifarious uses of these small sizes through all the public service works as well as the heating plants in the cities and towns of the Middle and Eastern States take pretty good care of any available tonnage. It is when one comes to the great Bituminous trade that the greatest change is found in the outlook from what was expected a few short weeks ago.

On Bituminous Coal a \$2 price at the mines was quoted and received in the early part of the month of October. Mining companies were talking of more orders than they could fill, with a scarcity of cars, and every one was buoyant, until one morning the whole scene changed, and now the other side of the shield is exposed to view. The conservative manufacturer is inclined to make the Coal on hand last as long as it possibly can; to give no new orders until that supply is more nearly exhausted, and even then the tonnage ordered is not on the liberal basis of the early fall. This naturally has its effect upon the Coal mine operator, and one no longer hears of too many orders and those orders on hand as contracts, for regular supplies can be filled with promptness as "the car service has improved." This state of affairs has an effect upon the asking prices, and while they are not as low as some of the summer time figures, they are less than October rates. A week ago scarcely anything was doing in transient trade.

Contract business continues good, and many of the shippers who were fortunate enough to have plenty of this class of business are kept as busy as ever and have no surplus of Coal to offer. As yet there has been no particular surplus of Coal on the market, as is easily seen by the fact that prices maintain themselves remarkably well. Some grades of Coal, in fact, are far short of requirements, and vessels have been detained for considerable periods for cargoes. This has been particularly the case at Philadelphia and Baltimore, whereas until recently the only cases of this kind were occurring at the lower ports.

The heavy shipments from Norfolk and Newport News have not started for the navy requirements as yet, although they are about due to commence. This will no doubt have the effect of making a more active demand for outside Coals in the New England market when they have fairly well started. For the present the premium on the Pocahontas and New River grades has been pretty well wiped out. And for that matter the orders for transient cargoes have almost ceased for the past week or two. This refers more particularly to New England.

The embargo to Boston & Albany points for all rail shipments continues, and there is still more congestion on the Boston & Maine. The demand for Coal in these sections is better than at most other points. It is a difficult matter to tell how long this will continue, however, although cold weather, of course, will cause some improvement.

Pea Coal is particularly short. In one case an additional advance of 25 cents per ton has been made in the circular, and generally elsewhere the companies have none for sale. The larger dealers are refusing to take orders for this size, having all the business already booked to take care of what can be secured. Buckwheat is still easy and prices are considerably below the quotations of a month or two since. In some directions, however, this size is short, and there is every prospect that there will be a very active demand again within the near future. Rice and No. 2 Buckwheat are in about the same condition as Buckwheat. Some grades are particularly short, while in others there is a surplus and prices are weak. The best grades are as a rule out of the market. Barley continues easy, and the range of prices does not show much variation from the summer and fall. The supply and demand for this size more nearly correspond than on any other size made. Following are some quotations for Anthracite Steam Coals at New York ports, per gross ton:

Pea .....	\$3.25 to \$3.50
Buckwheat .....	2.50 to 2.75
Rice or No. 2 Buckwheat.....	1.65 to 2.00
Individual and Washery Pea, \$3 to \$3.25; Washery Buckwheat, \$2.45 to \$2.60; Washery Rice, \$1.65 to \$2; Barley, \$1.45 to \$1.50	

Prices of Bituminous at the mines, for prompt delivery to line points, may be quoted as follows, per net ton:

Georges Creek.....	\$2.00 to \$2.25
Best Miller vein.....	1.50 to 1.75
Good Miller and Mosbannon.....	1.30 to 1.35
Best gas coal, ¼ lump.....	1.40 to 1.60
Run of mine.....	1.20 to 1.30
Slack .....	.85 to .95
Ordinary Clearfield.....	1.25 to 1.30
Ordinary Latrobe.....	1.20 to 1.25
Best Somerset.....	1.50 to 1.60
Somerset .....	1.25 to 1.30
West Virginia Freeport.....	1.10 to 1.25
Fairmont District, ¼ lump.....	1.30 to 1.35
Fairmont District, run of mine.....	1.15 to 1.20
Fairmont District, slack.....	.85 to .95

## New York.

NEW YORK, November 26, 1907.

**Pig Iron.**—Beyond two or three moderate lots the sales of Foundry Pig Iron in this district have been of little importance. There has been a sale of one lot of 5000 tons of Basic Pig in eastern Pennsylvania, with additional business under negotiation. We quote for Northern Iron, tidewater, \$19.50 to \$20 for No. 1 Foundry, \$18.75 to \$19 for No. 2 Foundry and \$18 to \$18.50 for No. 2 Plain. Alabama Irons are quoted nominally at \$20.50 to \$21.25 for No. 1 Foundry and \$19.50 to \$20 for No. 2 Foundry.

**Steel Rails.**—Beyond an intimation here and there as to the probable requirements for next year, the railroads are not moving. The rumored putting out of the Pennsylvania schedule for 1908 appears to have been premature. Apart from the South Chicago mill, very little business stands on the books for next year, the Eastern mills in particular being bare of engagements. There are signs that some roads are in need of Rails for early use and that any easing of the financial strain may bring out business.

**Structural Material.**—The city of New York will receive bids in the coming fortnight for the approach to the Manhattan Bridge, now under erection by the Ryan-Parker Construction Company. From 15,000 to 16,000 tons of Steel will be required. The American Bridge Company took a contract for bridge work for the Delaware & Hudson Railroad last week calling for 2000 tons. The pier shed of the Central Railroad of New Jersey at Liberty street, about 1200 tons, went to the Brown-Ketcham Iron Works, Indianapolis, Ind. The Somerset drawbridge, on which the New Haven Road asked bids some time ago, was awarded to the Phoenix Iron Works. At Philadelphia 300 tons of Steel will be called for by the contract for the College of Physicians Building. A quiet time in the Structural market is expected for the remainder of the year, the plans of the railroads for their bridge work in 1908 being slow in rounding up. A readjustment of labor conditions may be expected before any large new construction contracts are let for the building season of 1908. On mill shipments, tidewater deliveries, we continue quotations as follows: Beams, Channels, Angles and Zees, 1.86c.; Tees, 1.91c. On Beams, 18 to 24 in., and Angles over 6 in., the extra is 0.10c. Material cut to length is sold from stock at 2¼c. to 2½c.

**Bars.**—The Eastern Bar Iron manufacturers held their usual monthly conference in this city on Thursday of last week and decided to maintain the price of 1.60c., Pittsburgh, or 1.76c., tidewater, believing that it was inexpedient to reduce the rate under existing conditions. While this price is held by the leading mills, quite a number of the small companies making a limited range of sizes are naming lower figures, and from such sources the quotation of 1.50c. is quite common. Even at this concession not much business is being taken. Steel Bars are still held at 1.60c., Pittsburgh, or 1.76c., tidewater.

**Plates.**—Inquiries are few, but prices are steadily maintained, as follows, for tidewater delivery. Sheared Tank Plates, 1.86c. to 1.96c.; Flange Plates, 1.96c. to 2.06c.; Marine Plates, 2.26c. to 2.36c.; Fire Box Plates, 2.75c. to 3.50c., according to specifications.

**Cast Iron Pipe.**—Practically nothing is now being done in booking new orders. As far as can be ascertained, no inquiries whatever are in the market for spring delivery. Carload lots of 6-in. can be had at \$30 per net ton at tidewater.

**Old Material.**—Foundry stock is about the only class of material in any kind of demand, and even this is far from being active. Dealers who have made bids on railroad lists at prices much below those recently ruling have been surprised, as well as disappointed, at the acceptance of such bids. The market is so extremely quiet and consumers are so disinclined to make purchases that any material thus cheaply secured is regarded as likely to prove unprofitable.

Some of the prices which have been made in this way are so low as to upset completely the customary standards of comparative values of different classes of material. Railroads are throwing quite large quantities of Relaying Rails and Scrap on the market in an effort to realize cash. One railroad is offering 15,000 tons of Relayers and so far has not had a bid for them. As usual when the market is demoralized, dealers are finding much difficulty in securing the acceptance of shipments on old orders, consumers being unusually critical. The following range of prices is given as the closest approximation which can be made at present, per gross ton, New York City:

Old Girder and T Rails for melting.....	\$10.00 to \$10.25
Heavy Melting Steel Scrap.....	10.00 to 10.25
Old Steel Rails, rerolling lengths.....	11.50 to 12.00
Relaying Rails.....	20.00 to 21.00
Old Iron Rails.....	15.00 to 15.50
Standard Hammered Iron Car Axles.....	20.50 to 21.00
Old Steel Car Axles.....	15.50 to 16.00
No. 1 Railroad Wrought.....	12.00 to 12.50
Iron Track Scrap.....	10.50 to 11.00
No. 1 Yard Wrought, long.....	10.50 to 11.00
No. 1 Yard Wrought, short.....	10.00 to 10.50
Light Iron.....	5.00 to 6.00
Cast Borings.....	5.00 to 6.00
Wrought Turnings.....	7.00 to 7.50
Wrought Pipe.....	9.00 to 9.50
Old Car Wheels.....	18.50 to 19.00
No. 1 Heavy Cast, broken up.....	13.50 to 14.00
Stove Plate.....	12.00 to 12.50
Grate Bars.....	10.00 to 10.50
Malleable Cast.....	12.50 to 13.00

## Metal Market.

NEW YORK, November 27, 1907.

**Pig Tin.**—Business has been lighter than last week, the total sales probably aggregating less than 200 tons. It is doubtful if deliveries into consumption during November reach 1800 tons. The statistical position is peculiar, the arrivals being but 977 tons, when in ordinary months they would be three times this amount. The floats are but 800 tons, a ridiculously small amount. Holders of Tin in London are reluctant to ship here in view of the light demand and because of the financial situation. Price changes during the week have been small as follows:

	Cents.
November 21.....	30.60
November 22.....	30.70
November 23.....	31.00
November 25.....	31.45
November 26.....	31.15 to 31.25
November 27.....	31.20

The Chinese interests in the Far East are attempting to maintain prices, both there and in London, but have been refused the Government aid they requested. The London market closes steady at £137 15s. for spot and £139 for futures.

**Copper.**—The only excitement of the week has been a sharp upturn in the London market, which carried the price of standard warrants up to £63 10s. for spot and futures. This, however, was not accompanied by any demand from consumers, and, in fact, business for domestic consumption has been the lightest of any week this year. Prices are nominally higher at 13.75c. to 14c. for Lake, 13.62½c. to 13.87½c. for Electrolytic and 13.37½c. to 13.50c. for Casting Grades. Electrolytic for export is on a basis of 13.50c., f.o.b. New York. Even business in small lots, which up to a few weeks ago, was progressing satisfactorily, has now dwindled until there is practically nothing doing in this line. The export situation, however, is the bright spot in the Copper trade. The total exports for the first 26 days of the month aggregated 27,497 tons. The exports this month will make another new high record. The outgo for the past two months has averaged 1000 tons a day. Some business in Lake was done at 13.25c. late last week, but an attempt to buy more on the following day at the same price was unsuccessful. There was also a little activity in Electrolytic, which was sold at 13.37½c., and there promised to be a fair inquiry when the sharp bulge in London upset calculations. The London market closes firm at £63 5s. for spot, with futures 5s. higher. Best Selected is held at £67.

**Spelter.**—The price of Spelter has broken with more or less violence, and Prime Western brands can be had in New York at 4.70c. to 4.75c. In St. Louis the market is weak at 4.60c. The price of Ore has declined further, 60 per cent. now being quoted at \$34. A reduction of ½c. per pound has been made in the price of Sheet Zinc. The rapid falling off in consumption is responsible for the decline.

**Pig Lead.**—Prices of Lead have weakened further, and spot Lead can be had at 4.25c., New York; shipments being obtainable at 4.20c. In St. Louis Lead is quoted at 4.10c.

**Antimony.**—The price of Antimony has weakened further, and Hallett's for shipment can be had at flat 9c. Other grades are more or less nominal, with Cookson's at 10c., and outside brands range between 8c. and 9c.

**Nickel.**—The price of Nickel is unchanged, at 45c. for ton lots and 50c. to 60c. for smaller quantities.

**Ferroalloys.**—The price of Ferrosilicon continues un-



changed, at \$96 for 50 per cent. The larger interest in the Ferromanganese market is in Ore, the price having declined to about 20c. per unit for high grade Ore. It is believed that a large quantity of Ore held by an English firm is now hanging over the market. There is a well defined rumor to the effect that one or two large interests in this country are negotiating on a contract for Ore to run several years, involving between 100,000 and 200,000 tons annually.

**Tin Plate.**—The situation seems to be well in hand, and consumption is probably in excess of the productive capacity of the operating mills at present. Stocks are exceedingly light and prices are firm and unchanged on a basis of \$3.90 f.o.b., Pittsburgh, and \$4.09 f.o.b., New York. Abroad Tin Plates weakened further to 13s. 1½d.

**Old Metals.**—There is little interest in the market for Old Metals because many consumers feel that the present advance in Ingot Copper is unwarranted. There is, of course, some business in small lots. The following dealers' selling prices for large lots are more or less nominal:

	Cents.
Copper, Heavy Cut and Crucible.....	13.00 to 13.50
Copper, Heavy and Wire.....	12.50 to 13.00
Copper, Light and Bottoms.....	11.50 to 12.00
Brass, Heavy.....	10.00 to 10.50
Brass, Light.....	8.00 to 8.25
Heavy Machine Composition.....	12.25 to 12.75
Clean Brass Turnings.....	8.50 to 9.00
Composition Turnings.....	10.50 to 11.00
Lead, Heavy.....	4.00
Lead, Ton.....	3.75
Zinc Scrap.....	3.75

### Iron and Industrial Stocks.

NEW YORK, November 27, 1907.

Considering the continuous stream of liquidation in certain railroad stocks and bonds, which was not checked until Tuesday, the prices of iron and industrial stocks displayed comparative steadiness the past week. The following are the ruling prices on the most active stocks from Thursday to Tuesday: United States Steel common 22½ to 24, preferred 79¼ to 82¼; Car & Foundry common 24½ to 26¼, preferred 81 to 85; Locomotive common 32¼ to 35½, preferred 85 to 88; Steel Foundries common 5½, preferred 25; Colorado Fuel 14 to 16½; Pressed Steel common 15½ to 17½, preferred 64½ to 68; Railway Spring common 23 to 24; Republic common 12½ to 13½, preferred 55½ to 58; Sloss-Sheffield common 29 to 32; Tennessee Coal 100¼; Cast Iron Pipe common 17¼ to 18, preferred 49½ to 50½; Can common 3¼, preferred 34 to 37. Last transactions up to 1.30 p.m. to-day are reported at the following prices: United States Steel common 24, preferred 82½; Car & Foundry common 26, preferred 82½; Locomotive common 35½, preferred 85; Colorado Fuel 16; Pressed Steel common 17, preferred 65; Railway Spring common 23¼; Republic common 14½, preferred 58; Sloss-Sheffield common 33; Tennessee Coal 100¼; Cast Iron Pipe common 18¼; Can common 3½, preferred 35.

A meeting of the stockholders of the Westinghouse Air Brake Company will be held in Wilmerding, Pa., December 3, to vote on an increase in the capital stock from \$11,000,000 to \$14,000,000. The circular calling a meeting says: "In this connection we take the opportunity of assuring you that the interests of your company have been in no wise affected by the temporary embarrassment of the Westinghouse Electric & Mfg. Company and the Westinghouse Machine Company. Nevertheless, you will be gratified to know that under the friendly receiverships, which were resorted to by these companies for the common protection of creditors and stockholders, the affairs of these companies are being rapidly put into satisfactory shape."

It was officially announced November 25 that nearly all of the common stock of the Tennessee Coal, Iron & Railroad Company has been deposited with J. P. Morgan & Co. in exchange for United States Steel sinking fund 5 per cent. bonds. Including a new issue of \$3,750,000 of Tennessee common recently underwritten and upon which a first payment of 20 per cent. has been made, the total common stock approximates \$32,500,000. In exchange for this amount approximately \$38,675,000 of United States Steel bonds will be turned over to depositors.

The Sloss-Sheffield Steel & Iron Company reports for the three months ended October 31 last (October partly estimated). Profits from operation, \$559,655; less bond interest and taxes, \$62,310; balance, \$497,345; preferred dividend, \$114,000; balance, \$383,345; common dividend, \$125,000; surplus, \$258,345.

A special meeting of stockholders of the Pittsburgh Axle Company will be held in its offices in the Berger Building, Pittsburgh, on January 7, to vote on a proposition to issue \$40,000 first mortgage bonds.

**Dividends.**—The Railway Steel Spring Company has declared a quarterly dividend of 1¼ per cent. on the preferred stock, payable December 20.

The General Electric Company has declared a quarterly dividend of 2 per cent., payable January 15.

The National Lead Company has declared a quarterly

dividend of 1¼ per cent. on the preferred stock, payable December 16, and 1¼ per cent. on the common stock, payable January 2.

The National Enameling & Stamping Company has declared the regular quarterly dividend of 1¼ per cent. on the preferred stock, payable January 2.

The J. A. Fay & Egan Company has declared the regular quarterly dividend of 1¼ per cent. on the preferred and common stocks.

### Republic Iron & Steel Company Appointments.

In connection with the separation of Tennessee Coal, Iron & Railroad Company and Republic Iron & Steel Company affairs at the Birmingham, Ala., offices of the two companies, some appointments were made last week by the management of the latter company. For the present the office of general manager and vice-president for the Southern district will not be filled, and the Alabama organization meantime will work in closer relations with the general offices at Pittsburgh. W. A. Green, who resigned as secretary and treasurer of the Tennessee company, was made treasurer and auditor for the Southern district, and will be the commercial head of the Republic Company there. Other appointments are as follows: Dwight S. Guthrie, heretofore in charge of the St. Louis office, to be manager of sales for the Southern district, with headquarters at Birmingham; B. F. Tyler, purchasing agent and manager of commissaries; W. H. Johnston, assistant traffic manager, in charge of the Southern district; F. B. Keiser, general superintendent of Thomas furnaces; W. Wutherow, general superintendent of rolling mills; H. S. Geismer, superintendent of coal mines; W. J. Penhallegon, superintendent of ore mines and quarries. The Southern district offices will be in the Woodward Building, Birmingham.

### Matching Accounts in the Iron Trade.

Some of the expedients recently resorted to, in the breaking down of banking facilities, are interesting as indicating the primitive condition to which the machinery of exchange has gone back. The grouping of various interests at Pittsburgh has made possible the matching of accounts in a good many instances, and one illustration will serve for many transactions of this sort. Early this week a steel company in the Pittsburgh District drew a check for \$7000 in settlement of a small ore account with a blast furnace company. The company receiving the check at once indorsed it and passed it along, with a check for a small additional amount, to a merchant firm from which it had bought coke. This last company thereupon sent the original check to the steel company that had drawn it, in part settlement of an account for steel. The check completed its circuit in one business day, having been the means of liquidating accounts several times its face value.

The Technical Publicity Association held its monthly meeting on the evening of November 21, in New York, and listened to an address on "The Evolution of Fine Printing and Its Influence on Advertising Literature," by Paul Pfizenmayer. As usual, new members were elected.

There is no truth in the story published in the past week, that the United States Steel Corporation will soon start to build ore docks at Elk Harbor, near Girard, Pa. Its lands there were acquired when it took over the other properties of the Union Steel Company, a few years ago, but there is no project on foot for their improvement in the way stated.

A well supported movement is on foot in Germany to provide for a memorial to Adolf Ledebur, the famous metallurgist, for many years professor at the School of Mines at Freiberg, Saxony. A committee has been formed to collect a fund, the treasurer being the Kassenverwaltung der Koeniglichen Bergakademie zu Freiberg in Sachsen.



## The New Machinery Contract.

The machine tool builders and dealers have received copies of the contract or agreement submitted by the National Supply and Machinery Association and accepted as a tentative draft by the special committee of the National Machine Tool Builders' Association, which has met with a like committee of the Supply Association to consider the general question. The contract, it is understood, will be submitted in this form to the two associations at their next meetings.

At the present time each machine tool manufacturer has a contract form of his own creation. There is a wide difference between them, which is held to be a hindrance to complete co-operation for the welfare of the trade. The dealers have been attempting for some time to establish a uniform contract, and now appear to be nearer success than ever before.

Under the contract as submitted the agent is to have the exclusive right to sell the machines and attachments manufactured by a machine tool builder in agreed territory, while certain other territory may be open subject to withdrawal on 30 days' notice by the manufacturer. The agent will diligently and vigorously push the sale of the manufacturer's machines in his territory, and agrees not to offer for sale any competing machine within the limits of the territory, excepting as listed in the contract, unless the manufacturer has first been notified. The manufacturer shall supply free of cost a reasonable amount of catalogues and other literature and advertising material. The dealer shall keep in stock a given number of machines, as agreed upon.

The agent agrees to pay all invoices upon agreed terms, all invoices to be dated the day the machines are shipped, or when ready for shipment if machines are held at factory by instructions or for lack of shipping instructions from the agent. This covers machines held for attachments made by other manufacturers.

During the life of the contract the manufacturer will not sell his machines in the territory allotted to the agent, excepting as provided, and agrees to refer all inquiries and orders from such exclusive territory to the agent. Should the manufacturer ship new machines of his make into the territory he shall pay to the agent the regular commission on the agent's price of such machines.

The agent agrees to confine himself strictly to the territory named and not to accept orders for machines or attachments for the same made by the manufacturer for shipment into territory other than his own, except with the written consent of the manufacturer or his authorized selling agent for the territory. The manufacturer is given the right to charge up to the account of the agent a sum equal to the regular commission on the agent's cost price on any new machine or part that the agent ships or reships into territory other than his own, and is to pay the amount to the agent in whose territory the machine or part is installed, excepting where there is a written agreement to the contrary between the interested agents, and a copy of said agreement has been filed with the manufacturer. The manufacturer assumes the payment of the amount 60 days after shipment of the machines. In case of shipment or reshipment into exclusive territory by the manufacturer or any one else then the manufacturer will collect, if possible from the offending party and pay over to the agent a sum equal to the regular commission on the agent's cost price on machines so shipped. Prices shall be as per list attached and forming a part of the agreement, subject to subsequent price changes. The discount on the price-list to agents shall be as agreed, for the machines crated and f.o.b.

The manufacturer agrees to maintain his quotations in open territory on a basis of not less than a per cent. above cost to the agent, presumed equal to that received by the agent as his discount.

The agent agrees not to sell at a lower price than that established by the manufacturer, and not to make subsequent allowance of any kind whatever.

Prices are to be changed by telegraphic notice, to take

effect at once, which shall be immediately confirmed by mail. Bona fide sales during the following 10 days on quotations already out shall be entered at the old price; the agent shall notify the manufacturer promptly of such prospective sales.

By section 12 it is agreed that no further stock orders are to be accepted after such notice of change in prices. Unfinished stock orders are to be invoiced at the new prices. As soon as possible after change in prices the agent agrees to furnish the manufacturer a list of all unsold machines on stock orders. In the event that the change is a reduction in price, all unsold stock machines invoiced to the agent within the six months next prior to said notice shall be subject to the reduction in price. Should there be an advance in price the agent has the right to cancel any or all unsold stock orders. It is agreed that the termination of this contract cancels all unsold and unfilled stock orders. At the conclusion of the agreement as printed is a note stating: "We believe a uniform agreement in the matter covered by section 12 wise; if, however, the manufacturers wish this to be an individual matter, we will agree to it. Section 12 is intended to cover cases where the manufacturer on a rising market invoices stock orders at the price existing at the time of shipment, without regard to price named in order and accepted by manufacturer when order was placed."

Again taking up the proposed contract, it is provided that the manufacturer shall have the right to limit the number of machines for which he will accept stock orders. The manufacturer warrants that the machines he supplies will fulfill the conditions named in his literature and specifications, and are adapted for the work for which the literature and specifications recommend them. The workmanship and material of machines, if not as represented in the literature and specifications of the manufacturer, will be made good by him; but no allowance will be made for any expense incurred in repairing or supplying any defective or missing parts, unless on the written consent of the manufacturer.

In case the agreement is terminated by the manufacturer, he agrees to buy back at actual cost to the agent, including freight and drayage at warehouse of the agent, all new machines, excepting specials, as the agent may have on hand unsold, purchased within nine months next prior to said notice of termination. In case the agreement is terminated by the agent the manufacturer is given the right to buy back, at actual cost to the agent, including freight and drayage at the warehouse of agent, any or all of his machines on hand unsold with the agent. It is mutually agreed that should either party become involved in receivership, bankruptcy or insolvency proceedings, the agreement may be terminated at once at the option of either party.

The agreement shall be binding on the successors or assigns of the parties thereto.

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The Monterey Steel Works, at Monterey, Mexico, has installed a Bessemer converter to work the duplex process in connection with the Knoth slag process, which has given great success and satisfaction in the quality and quantity of the product. The vessel receives the iron directly from the blast furnace; after blowing, the metal is put into basic open hearth furnaces for further treatment. The process had only been in use a short time when the coke supply gave out and the blast furnace had to be shut down. The furnace will start again as soon as sufficient coke is received. Henry Knoth, superintendent of the steel plant, who recommended this process, is confident of its proving a great success.

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Chain makers throughout the country have decided upon a reduction in wages of employees of about 10 per cent. This reduction is a return to the wages paid prior to the last advance of 10 per cent. given to chain makers, which went into effect last March.

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The Star Drilling Machine Company, Akron, Ohio, has been awarded a contract to furnish 50 large drilling machines to the Government for use on the Panama Canal.

## The Machinery Trade.

NEW YORK, November 27, 1907.

Business transacted the past week by machinery houses showed very little if any improvement over that of the previous week, though there were some important developments which indicate increased activity on the part of a few of the larger interests. General conditions have apparently improved to an extent, owing to an easier money market. Aside from the purchasing of machinery by a leading industrial corporation, the orders placed were neither numerous nor individually large; in fact, a good part of the contracts closed have come from foreign sources. The feature of the week was the number of large inquiries received, two of them from railroads. While some of them will not likely produce actual business before the first of the year, one of them, according to reliable reports, is to be closed within the next 10 days.

Crane men who until now have enjoyed a good business note that inquiries have fallen off to an unexpected extent, even considering the general lack of orders in the trade. There are some good things for the near future, however, and among them will be some extensive crane requirements for the New York Central Railroad, which, it is said, will follow closely the large machine tool list recently issued. The requirements will include a number of large cranes, and will probably result in a larger order in that line than has been placed in this vicinity for at least two months. The Delaware, Lackawanna & Western Railroad has not as yet closed orders for the five cranes mentioned in these columns before, but it is expected that the business will be placed within the next two weeks.

Dealers in second-hand machinery are not doing such a bad business now as one might suppose, considering the fact that the demand for new machinery has fallen off. While there are not many inquiries for second-hand equipment, some good business is being done with people who visit the dealers and shop around for equipment they are in immediate need of. These buyers are invariably parties who do not care to tie themselves up to any large expenditures just now and are willing to make old machinery serve their purpose for the present. An instance of this kind was noted last week when a railroad bought several machines for shops in this vicinity through one of its mechanical men. The company did not care to make the purchases through its usual source because of the apparent economy, and accordingly a man was sent out to pick up the machinery in the second-hand trade.

The demand for machine tools for export to Europe is not strong, even from the best known exporters in that line, and it is apparent that the buyers are especially cautious, as they are supplying only the immediate demand. The business from South America, Mexico and Canada continues good, and the demand from the latter two countries is surprisingly strong in view of the depression elsewhere. There are some extensive inquiries in the market from the Japanese export houses for private Japanese enterprises, as well as for machinery equipment for the Imperial Government.

### Machinery Requirements of New York Central Railroad.

One of the largest and most important machine tool inquiries received in the trade for some time was that issued the past week by the New York Central & Hudson River Railroad for machinery, aggregating \$60,000 in value, for the Springfield and Brighton, Mass., shops of the Boston & Albany Railroad. About a month ago the road issued a preliminary list, covering about the same tools as those on the list just sent out, for the purpose of ascertaining the cost of the machinery required and getting the necessary appropriation, and last week the following list, covering 62 machine tools, came through the purchasing department to the machinery houses for final bids. In sending out the list the road requested bids to be in within a few days, so that machinery houses had but a short time to prepare their bids. It is understood from a reliable source that the railroad is badly in need of the tools on the list and that it is the intention to place orders for the machinery within the next few days:

*Springfield, Mass.*—One 90-in. extra heavy driving wheel lathe, driven by direct connected 50-hp. motor, to turn wheels 44 x 84 in.; one 18 x 30 x 96 in. gap grinding machine, motor driven; one 80-in. dry grinder; one No. 2 universal tool grinder, motor driven; one twist drill grinder, one 6-in. turret lathe, three motor driven emery grinders, one special horizontal rod milling machine, motor driven, with table 37 in. wide and 15 ft. long; one 1½-in. triple head bolt cutter; one 51-in. vertical tire boring machine, to be driven by 25-hp. motor; one 42-in. vertical tire boring and turning mill, motor driven; one 90-in. vertical tire boring and turning mill, motor driven; one 42-in. car wheel lathe, motor driven; one 16 in. by 4 ft. engine lathe, three 24 in. by 7 ft. geared head engine lathes, one 16 in. x 6 ft. toolroom lathe,

motor driven; one 90-in. quartering machine, motor driven; one No. 2 horizontal cotter drill, two 24-in. pillar shapers, one 24 x 24 in. by 8 ft. planer, two motor driven radial drills, one 60-in. radial drill, one No. 3 cold saw cutting-off machine, motor driven; one cutting-off machine for 3-in. round bars, one plain milling machine, one No. 4 turret head power bolt cutter, one No. 3 heavy double axle lathe, motor driven; one 25-in. crank slotting machine, motor driven; one 600-ton hydraulic wheel press, motor driven; one No. 4 bolt threading machine; one 42-in. vertical milling machine, motor driven; one 16 in. by 4 ft. motor driven lathe, two 24-in. heavy pattern upright drill presses, motor driven; one 5000-lb. steam hammer, one 5000-lb. double frame steam hammer, one 2500-lb. single frame steam hammer, two helve hammers, one oil furnace, one bar iron shear, capacity 4½-in. round or 4-in. square iron bars; one 3½-in. bolt heading and forging machine, one boiler shop radial drill; five 20-in. back gear and power feed drill presses, motor driven; one 1½-in. double head staybolt cutter.

*Brighton, Mass.*—One 3 in. by 7 ft. patent geared head lathe, one 22 in. by 5 ft. patent geared head lathe, one 16 in. by 4 ft. patent geared head lathe, one 24-in. pillar shaper, two 60-in. radial drills, one 42-in. vertical boring and turning mill.

The machines in the list to be shipped to Springfield, Mass., are for the equipment of new shops which the company has been building at that point. These include the erection of a shop 100 x 480 ft. between the machine shop and blacksmith shop, two parallel buildings, 480 ft. in length. This shop is divided into an erecting shop, 75 x 480 ft., and a machine shop, 25 x 480 ft. In addition a new tank shop, 80 x 200 ft., has been built, connecting with the present blacksmith shop. The new buildings have been so constructed that with the old ones they form one large building unit.

In connection with this machine tool list the statement made in these columns last week concerning the mechanical requirements of the New York Central Railroad for next year is of considerable interest. It is understood that the mechanical department has asked for an appropriation of over \$2,000,000 for the purchase of machinery next year. In view of the recent decision of the road to issue a large amount of equipment trust certificates, the road is undoubtedly preparing for its immediate requirements, which, as has been known for some time, include a large amount of machine tools.

At least one local machinery house has a fair sized inquiry for a list of machine tools from a Southern railroad, which, it is understood, is to be closed out very shortly. The same road has been placing some business for general supplies. It is declared in the trade that other Southern railroad interests will shortly come into the market with small lists.

The Norfolk & Western Railroad has awarded contract for the construction of a new car repair shop, 50 x 125 ft., at its West Roanoke yard.

There are inquiries in the trade from the Yoshinotani Mining Company, which controls the Karatsu Iron Works of Tokio, Japan, covering an extensive line of equipment for a repair and manufacturing plant which the company expects to build. The buying will be done by Toshisuke Takeo, who has his headquarters in the office of the General Engineering Company, 90 West street, New York, but he states it is probable no orders will be placed until after the first of the year. The enterprise will involve the expenditure of fully \$500,000, and it will include the construction of a power plant of about 120 hp.; machine shop, about 80 x 150 ft.; boiler shop, about 80 x 120 ft.; foundry, 80 x 100 ft., and perhaps some other buildings, such as forge shops, blacksmith shop and the like. The requirements will include the purchase of a full line of machine shop equipment and other machinery necessary to equip the plant as outlined above. Mr. Takeo is at present collecting data and catalogues and looking into the cost of machine tool equipment.

Important purchases of machinery have been made within the past few days by the Standard Oil Company, which, we understand, is buying the equipment for its proposed new shops to be erected at Bay Way, near Elizabeth, N. J. A short time ago the company received bids on the equipment for these shops, which will entail the expenditure of a large amount of money. Preliminary plans call for the erection of a machine shop, 100 x 250 ft.; woodworking building, 150 x 300 ft.; foundry, 50 x 100 ft.; forge shop, 75 x 100 ft., and a three-story power house, 100 x 200 ft. These shops are to be used in connection with the company's oil refineries on Newark Bay.

Plans are now completed for the repair shops to be erected in Hoboken for the Hudson Companies, which will be used for taking care of the cars in use in the Hudson tunnels. The shop will be erected at the Hoboken terminal and it will be a wedge shaped building, about 36 ft. wide at one end, 87 ft. wide at the other and about 174 ft. long. The building will be located directly over the tunnels, and elevators will be installed to hoist cars out of the tunnel through the shop floor. It will be remembered that some orders were placed for machinery equipment for this shop several months ago, but it is thought that some more ma-



chinery purchases will be necessary to complete the equipment. Power will be supplied from the company's power house, which has already been provided for.

Contracts are to be let shortly for the construction of a new plant to be erected at Claremont and Halsted streets, Jersey City, N. J., by Jabez Burns & Sons, 542 Greenwich street, New York. The firm, which manufactures coffee and spice machinery, proposes to move its manufacturing plant and offices to Jersey City as soon as its new quarters are completed, which it is expected will be next spring. The building is to be 150 x 275 ft., surmounting a basement 40 x 150 ft., and for a distance of 40 ft at the front of the structure the building will be two stories in height. The remainder of the structure will be a one-story building, with no basement beneath it. The factory is to be constructed of brick and concrete, and will be fireproof throughout. A power plant of 100 hp., the style of which has not been decided upon as yet, will be installed in the basement, and the first story will be given over to general manufacturing purposes, while the second floor will be used for offices and a drafting room. When the building is completed the company will move its present machinery equipment to Jersey City, but it is expected that other machinery will be needed. The requirements will probably include turret lathes, radial drills, a boring mill and presses and punches. The company purchased some punches quite recently to add to its present plant. The plans for the buildings have been prepared by John T. Rowland, Jr., and Frank Eurich, Jr., of Jersey City, who will be the supervising architects. The mechanical details will be carried out by the company's own engineering force.

The Ball & Wood Company, 17 Battery place, New York, is now manufacturing a line of high grade air compressors which are being offered in the trade. This is a new line of manufacture for the company, and it is announced that its equipment is of an advanced type.

The Ridgway Dynamo & Engine Company, through McClave, Rimmer & Co., 90 West street, New York, is furnishing a 4800-ampere booster set for the Cambria Steel Company.

#### Important Power Projects.

The Southern Power Company, Charlotte, N. C., is having plans prepared for the construction of a steam power plant, to have a capacity of about 50,000 hp. and to cost in the neighborhood of \$2,000,000. The plant is to be constructed to augment the company's various water power electric plants during periods of low water and will be built in sections as needed, construction work on the first section to be begun early in 1908. Turbines of 10,000 hp. will be used. The company has completed two hydraulic plants, furnishing 40,000 hp., and has two under construction to furnish 60,000 hp. Eventually more than 200,000 hp. will be distributed to manufacturing enterprises in North and South Carolina. W. S. Lee, Jr., is engineer.

The Michoacan Power Company of Mexico City, Mexico, which is one of the subsidiary interests of the Guanajuato Power & Electric Company, with offices at 25 Broad street, New York, is planning to build two large power plants on the Angulo River, Mexico, for which concessions have been acquired from the Mexican Federal Government. The enterprise will necessitate the purchasing of equipment to construct two hydro-electric plants, one of 8000 hp. and one of 4000 hp., as well as a 90-mile transmission line. All of the purchasing is being done from Mexico, and some inquiries for the enterprise have already been placed in the trade. It is the intention of the company, it is understood, to construct the plants as soon as possible, and consequently the orders will be placed very shortly.

The Mozart Improvement Company, Wheeling, W. Va., has incorporated, with a capital stock of \$10,000, to operate a power plant, for the equipment of which it is now in the market for small pumps for pumping water, small motors, a dynamo, an upright steam boiler and other electric apparatus. Those connected with the company include Edmund M. Kirchner and Harry L. Hesse of Hesse & Kirchner, Schmulbach Building, Wheeling.

The Department of Water Supply, Gas and Electricity of New York has applied to the Board of Estimate for an appropriation of \$4,000,000 to pay for the first section of the filtration plant for the Jerome Park reservoir, and the trade can expect before long to hear of machinery requirements for the enterprise.

#### Business Changes.

The arrangement whereby the Peerless Belting Company, Buffalo, N. Y., acted as agent for the Du Bois Iron Works, Du Bois, Pa., has been canceled, the latter company having opened an office at 506 White Building, Buffalo, with Harry H. Pratt as manager. The Du Bois Iron Works has also discontinued its connection with the F. H. Brown Machinery Company, which was formerly its Pittsburgh agent, and H. J. McCormac has been placed in charge of the business in that territory, with offices at 1206 Park Building, Pittsburgh, Pa.

**Catalogues Wanted.**—The Arthur Koppel Company, Pittsburgh, Pa., desires catalogues from manufacturers of

name plates to be attached to the different kinds of cars which the company manufactures.

## Chicago Machinery Market.

CHICAGO, ILL., November 26, 1907.

Discussion of market matters in the machinery circles, as in other trades, naturally concerns financial conditions largely to the exclusion of other topics. The situation in this respect, though perhaps not positively improved, is certainly no worse; it is also observed that the favorable showing of increased cash reserves presented in a statement made last week by the State banks has had a reassuring effect, and will strongly tend to restore confidence. There being no orders nor inquiries for machinery in lots of considerable magnitude, dealers and manufacturers are giving their attention to a limited demand for small requirements that constitutes practically all there is doing. A few such orders have been placed during the week, but the aggregate of all is light. Following so quickly upon a record breaking period of activity, the present quietness of trade is perhaps unduly emphasized. A prominent machine tool dealer in reviewing the situation expressed the opinion that the entire attitude of the business world, and that of the banking interests especially, resembled a case of stage fright more than anything else. For months it has been generally recognized that the pace in business was too fast to be held and that reaction would surely ensue. Yet, when the expected happens, instead of a gradual and orderly recession toward a more normal plane, business suddenly withers as under a frost and panicky sentiments develop. There is no doubt that orders for tools and machinery are being held up rather out of apprehensive caution in creating new obligations than from actual abandonment of plans. There is a hopeful feeling prevalent among the trade that developments between now and the first of the year will result favorably in clearing up the most serious obstacles in the way, and that by January business will begin to move in a more normal manner.

Conspicuous because of the magnitude of the work involved and of especial interest at this time, when activity in large undertakings is at a low ebb, is the announcement of the Corn Products Company that work on its new \$5,000,000 plant to be established at Summit, Ill., will be begun at once. In fact, a force of men is now engaged in laying out foundation lines and clearing the site preparatory to the actual work of construction. Weather during the winter months will hardly permit a large degree of activity in outside construction, but it is hoped to have the preliminary work so far advanced that everything will be ready for rapid progress in the spring. An idea of the imposing character of the plant may be gained from the fact that it will include 33 structures, ranging in height from 1½ stories to 14 stories, and in dimensions from 60 x 140 ft. to 150 x 400 ft. The principal structures will comprise two refining buildings, a wet starch building, manufacturing building and three 3-story warehouses, each 100 x 300 ft.; besides these there will be a number of 4-story general manufacturing buildings, 100 x 150 ft. A large amount of steel will be required for the erection of grain storage tanks, the aggregate capacity required being 1,000,000 bushels. The steam generative plant will be supplied with water tube boilers totaling 1200 hp., and electric generators to produce 8000 kw. will be installed. Practically all of the buildings will be of reinforced concrete and brick construction. None of the machinery required for this plant has been purchased, though plans and specifications for the entire equipment were completed some months ago. These will be revised and the work of selection and purchase will proceed during the winter months. Machinery dealers will doubtless look forward with considerable interest to the placing of these requirements, since they will help to reinforce the diminished volume of business.

Some weeks ago, in referring to the machine tool requirements of the Frisco System for the equipment of its new shops now under construction at Springfield, Mo., it was stated in these columns that the purchase of practically all of the list submitted had been arranged for. While this was true in the sense that the bids received had been opened and selections made, it is now stated that no orders were actually placed, and that purchase has been deferred. It is likely that new bids will be asked for later on. This action, however, has no bearing upon the continuance of construction work, which is going forward without delay. It is understood, also, that the motive power equipment will be installed as soon as the buildings are ready for its reception.

The Palmetto Metal Company, 586 West Lake street, Chicago, has increased its capital stock from \$25,000 to \$40,000. The additional capital will be devoted to the pur-



chase of more modern machinery for the manufacture of Babbit metals and to provide for the carrying of larger stocks to accommodate an increasing business.

The Desouchet Motor Appliance Company, Chicago, has been incorporated with a capital of \$100,000, primarily for manufacturing and marketing the Universal motor starter. This device is designed to receive and hold a mixed charge in the cylinder of a gasoline engine ready for use when it is desired to again start the machine. It is represented as being applicable to automobile, motor boat and stationary gasoline engines, and is intended to render the use of the usual starting crank unnecessary. The Universal motor starter will be first exhibited to the public at the coming automobile show, to be held in the Coliseum during the first week in December. The incorporators of the company are A. L. Desouchet, Franklyn Hobbs and Eugene A. Hanks.

Construction work on the new plant of the Wallace Machinery Company, Champaign, Ill., is proceeding without interruption, and the company expects it will be ready for occupancy about the first of the year. It is stated that the orders in hand for spraying machinery and gasoline engines will provide ample work for the new plant when completed. Machinery equipment has already been purchased.

Pawling & Harnischfeger, makers of traveling cranes, Milwaukee, Wis., beginning October 1, shortened working time in their shop from 10 to 8½ hours per day. Only a few men, however, have been laid off on account of the restriction in business due to financial stringency.

The Independent Harvester Company, Plano, Ill., manufacturer of farm machinery, has completed and under way important additions to its plant, including buildings and machinery equipment. The blacksmith shop has been enlarged by an addition 40 x 75 ft., of reinforced concrete, and the woodroom has been extended by a building 80 x 97 ft. The new machines installed in the latter department include an 8-ft. engine lathe, 24-in. planer, heavy rip saw and gang boring machine. The machine shop room has been lengthened 90 ft., and among the new machines supplied are a power hack saw, steel cut-off saw, right and left geared vertical tapper and sheet iron shears. New vats and carriers are being installed in the paint department. The foundry building has been reinforced with a 25-ft. concrete wall, which will support a new roof with skylights, and will be doubled in capacity. Within the past two months the working force of the plant has been doubled.

The Beaumont Ice, Light & Refrigerator Company, Beaumont, Texas, states that owing to the recent unfavorable developments in the general financial situation it has decided not to purchase the additional ice machinery, concerning which an announcement was recently made in these columns.

Proposals will be received at the office of the secretary of the Board of Public Affairs, Minerva, Ohio, up to December 4, for one 150-hp. boiler, 72 in. by 18 ft. Specifications will be furnished upon application.

## Philadelphia Machinery Market.

PHILADELPHIA, PA., November 26, 1907.

Sales during the week have been very light. One or two merchants received orders for individual tools of the heavier class, but the bulk of the business has been done in the smaller equipment. Curtailment policies are in force in many of the industrial plants in this territory, and buyers generally will place no orders except for such equipment as is actually necessary to keep plants in operation. The financial situation has held up almost every project under consideration for plant extension or the building of new plants. The local railroads have suspended buying of machine tool equipment almost entirely, and in some cases have cancelled orders already placed. Sharp retrenchment has been ordered in the railroad shops, and it is not likely that much can be expected from the railroads until the situation in general is greatly improved. There has been no complete shutdown of plants or shops in this territory as far as can be learned. Many are running on reduced hours, and in a few instances are being operated on four or five days a week. There are a few cases, however, where plants are not only still running full time but are also being operated overtime in order to keep up with the business on their books.

Inquiries are confined largely to individual tools. As a rule they do not develop into business very satisfactorily, but buyers who need tools are asking prices so as to be prepared to place orders just as soon as they are satisfied that indications point to a resumption of more normal conditions.

Manufacturers generally are catching up very rapidly on the business on their books, and in a number of instances are making moderate stock orders. From present indications, however, there will be no loading up of stock tools, but rather a reduction in production will be adopted, so as to keep business adjusted to conditions as much as possible.

Collections are reported slow and new accounts are carefully scrutinized before acceptance. Many concerns that have usually made prompt settlements are said to be making their remittances rather slowly, owing principally, it is understood, to the difficulty experienced in obtaining funds from the usual sources promptly.

There is little doing for export. Inquiries have been light and but few orders have been placed in this territory. Special tools appear to be in better demand than those of the standard types, most of the business closed having been of that character.

The demand for boilers and engines, both new and second-hand, as well as second-hand machinery, has been rather quiet, reflecting the general condition of the trade. Sales have been small and confined to the smaller class of equipment, the larger propositions being held up as a rule by the unfavorable financial situation.

Foundries are not fully occupied. Old orders have in many cases been completed and there is little business about for forward delivery. Most of the business in both iron and steel castings is of a day-to-day character, and the tonnage is not large.

Schaum & Uhlinger, manufacturers of textile and special machinery, Philadelphia, have become incorporated under the laws of Pennsylvania, the capitalization being \$100,000. Otto W. Schaum is president; W. H. Rometsch, treasurer, and Gustavus B. Fletcher, secretary.

The temporary engine yard at Wayne Junction, for which the Philadelphia & Reading Railway is receiving bids, as referred to in these columns last week, under what is known as contract No. 26, includes, among other items, a water station, engine shelter, coaling station, trestle, strand chute and ashpit. Specifications may be obtained from the chief engineer Reading Railway Company, Reading Terminal, this city.

Director Stearns of the Department of Public Works, Philadelphia, has awarded the contract for the erection of a 6,000,000-gal. pump for the Belmont high service station to the Allis-Chalmers Company, Milwaukee, Wis. The price, it is understood, was \$33,000.

The Cornwall Ore Banks Company, Lebanon, Pa., has under construction a power plant consisting of 3300-hp. gas engines and generators. The engines will be driven by coke oven gas furnished by the Pennsylvania Steel Company and the Lackawanna Iron & Steel Company, whose plants are in close proximity to the power station. The current generated will be transformed to high tension and transmitted to Cornwall, where it will be again transformed and transmitted about the mines.

The Gloucester County Electric Company, Gloucester, N. J., is having plans made for a new brick power house to be erected at Pitman, N. J. The building is to be 43 ft. 8 in. x 104 ft., one story.

The Standard Steel Works, Burnham, Pa., organized over 30 years ago at a capitalization of \$100,000, will be reorganized under the name of the Standard Steel Company, capitalized at \$7,000,000. William Burnham, president of the old company, will be president of the new concern, and Robert Radford, secretary-treasurer. Of the \$7,000,000 capital, \$3,000,000 will be in stock and the remaining \$4,000,000 in first mortgage bonds. The new charter will go into effect January 1, 1908. The Baldwin Locomotive Works is the heaviest stockholder in the new company.

The Royersford Foundry & Machine Company, Royersford, Pa., has been appointed general sales agent for the roller bearing boxes manufactured by the Standard Roller Bearing Company, Philadelphia, which it will handle in connection with its line of shaft hangers and power transmission machinery. While business with the Royersford Company is not large at the time, the outlook is considered good, and it is expected that business will return to normal conditions at an early date.

The Energy Elevator Company reports business in a satisfactory condition. Orders continue to come in in good volume, both from local and out of town sources, and every department is being operated to its full capacity, with work enough on hand to keep the plant fully occupied well into next year. This company has recently shipped a heavy freight lift for export to Havana, Cuba; has installed an electric freight lift for parties in Lansdale, Pa., and a passenger lift in Lanark, Ill. Orders for hand and power freight lifts and carriage elevators have been booked from a number of customers and the prospects are considered very encouraging.

## Cleveland Machinery Market.

CLEVELAND, OHIO, November 26, 1907.

A better feeling and more confidence prevail than a week ago, and the local financial situation is slightly easier. The relief, however, is not sufficient to cause any noticeable improvement in industrial operations or change in the retrenchment policy that has been adopted by practically all manufacturing plants. The Cleveland banks have decided, if the situation has not sufficiently improved by next week, to per-

mit the return to currency payments, to begin issuing clearing house checks to replace bank checks, that have been used generally the past three weeks in meeting payrolls and for other purposes. The checks will be issued in denominations of \$1, \$2, \$5 and \$10, and each bank will be required to deposit approved bonds and other collateral to the extent of 33 1-3 per cent. more than the face value of the checks issued. An order for \$5,000,000 of these checks has been placed. It is believed that these checks will so relieve the financial stringency that not only will the banks be able to lift the 60-day rule on savings deposits, but also that industrial plants that have been partially shut down because of the money stringency, rather than the absence of orders, will be able to resume nearly full operations. While manufacturing plants are as yet unable to resume normal operations, but few men are now being laid off, and further retrenchment on the part of a large majority of plants is not expected. With only one or two exceptions have local plants shut down entirely, but the majority are running on short time with reduced forces.

No change is noted in the machine tool market, and an improvement cannot be expected until conditions improve considerably. Dealers are selling a few single tools for immediate requirements, but new inquiries are scarce, and a number of orders that are pending will not be placed for the present. There are some inquiries for second-hand tools, but prospective purchasers, as a rule, say that they want prices, but are not ready to buy. While it is thought that the crisis is past, dealers do not believe that the situation will be relieved rapidly enough for them to hope for a fair volume of business before the beginning of the year. As confidence returns it is expected that many orders for machine tools that have been canceled will be renewed.

Machinery manufacturers are getting few orders at present, especially those that depend on large railroad and mining work. The new business of engineering plants is confined mostly to repair work. The foreign demand for machinery and tools is holding up fairly well.

The Cleveland Wrought Washer Company began operations this week in its new plant on West Fifty-eighth street. The building is 185 ft. long by 40 ft. wide at one end and 70 ft. at the other, one and two stories high, and is equipped in an up to date manner. The company will manufacture washers, riveting burrs and special stampings. The officers are Charles L. Wasmer, president; J. G. Bettcher, vice-president, and Carl E. Kramer, secretary and treasurer.

The Standard Tool Company reports that it is getting a fair amount of orders in spite of the temporary depression. While night work has been discontinued, the plant is being operated at full capacity in the day time, none of the day workmen having been laid off nor their hours shortened. The company reports that its foreign business is keeping up in very good shape.

The Cuyahoga Light Company, which now has one light and power plant in Cleveland for supplying a portion of the downtown section of the city with light and power, announces that as soon as franchises now pending in the City Council are granted it will proceed with the erection of four similar plants for furnishing electricity and steam heat. This plan will be followed rather than the erection of one large plant. It is expected that the company will soon be given the additional franchises.

The Ney Mfg. Company, Canton, Ohio, will soon have completed an addition to its plant, which will largely increase the capacity. The addition is of brick, 40 x 184 ft., and three stories high. The company will soon begin the erection of a three-story office building. The effect of the present depression is not being seriously felt by the company, which is well supplied with orders for haying tools, hay knives, door hangers, hardware specialties, and its other products.

W. S. McKinnon of Ashtabula, Ohio, states that there will be no change in the business or management of his company, which was incorporated a few days ago with a capital stock of \$150,000, under the name of the McKinnon Iron Works Company. The stock will remain largely in the name of Mr. McKinnon and members of his family.

The Ferry Cap & Set Screw Company, which began operations a few months ago in a new plant on Scranton road, reports that it is well filled with orders, the plant being run at full capacity. The company manufactures cap and set screws and rivets.

The Cleveland Wire Bound Box Company, capitalized at \$20,000, has been incorporated by Herbert DePrez, H. D. Messick, H. A. Haufhurst, H. H. Johnson and M. C. Russ. The company is planning the establishment of a factory for the manufacture of wire bound boxes.

The E. O. Long Mfg. Company has been organized at Clyde, Ohio, for the manufacture of a dump wagon. The company is now fitting up a manufacturing plant. The officers are: George F. Sager, president; E. O. Long, vice-

president; W. D. Pearce, secretary, and I. M. Parker, treasurer.

The Marion Concrete Block & Roofing Company, Marion, Ohio, has been incorporated with a capital stock of \$10,000, and will build a plant for the manufacture of various cement products, making a specialty of concrete blocks and roofing. The officers are as follows: M. Q. Chase, president; A. F. Smith, vice-president; C. G. Roecker, secretary-treasurer; Fred H. Morrison, superintendent. The above, with M. B. Chase, comprise the Board of Directors.

The Reeves Engineering Company, Mt. Vernon, Ohio, has been incorporated with a capital stock of \$100,000 by A. R. Sipe, Frank E. Kirby, P. S. Kelsner, H. C. Devin and E. O. Arnold.

With an authorized capital stock of \$30,000, the Standard Clutch Mfg. Company, Sidney, Ohio, has been incorporated by Frank Lucas, W. P. Harmony, J. L. Van Riper, E. L. Haskins and Oliver Farrar.

With a capital stock of \$10,000, the American Fabric Belting Company, Cleveland, has been incorporated by L. M. Williams, O. D. Baldwin, R. J. Bulkely, R. H. Crowell and G. M. Nixon.

The Delphos Foundry & Mfg. Company, Delphos, Ohio, has been incorporated with a capital stock of \$10,000 by S. W. Sherry, John P. Fitzmartin, John D. Sherry, Anthony Heingartner, William C. Brunson and Henry Ostendorf.

## Cincinnati Machinery Market.

CINCINNATI, OHIO, November 26, 1907.

Readjustment processes, referred to last week as marking the course of the Cincinnati machinery markets, show a daily increase in interest and accumulation of inquiries. While in some lines there is an abnormal accumulation of tools on the stock floor, and the working time has been reduced to 35 hr. a week, the optimistic letters received from dealers and sales agents, some asking a renewal of portions of canceled contracts, or accepting machines overdue on forward deliveries, combine to restore confidence in the mind of the manufacturer.

Probably the most confirmatory evidence of returning confidence furnished this machinery making center during the week has come to the builders of motors and generators and electric specialties. The receipt of a nice order from an important Western railroad was mentioned last week. Now comes some good orders from the East, which shows conclusively that the long deferred buying movement anticipated from the railroads has at least developed in its primary stages. The Bullock Electric Mfg. Company, or, as the local Norwood plant is better known, the Cincinnati branch of the Allis-Chalmers Company, reports a most remarkable and most welcomed revival of inquiry and orders during the past week. An order from the Pennsylvania Railroad for something over \$5000 calls for motors and generators, medium sized units, for about 60 days delivery. Another good order from the East is for electrical equipment for rope factories, cotton mills and similar lines. This branch of the company is still running full time, and save a few women, armature winders and unskilled workmen, has retained its full working force, and if the buying spurt of the week continues the company will go on right through the dull period on full time. Collections are reported fair in the electrical equipment line, while tool builders vary considerably in their estimates in the matter of credits. Some say collections are surprisingly good, while others complain.

Very encouraging are the indications, however scarce just now, of European patronage. Some nice inquiries have been received during the week by manufacturers of planers and shapers. One of the large companies making a specialty of planers is shipping a 48-in. machine to Germany, which is the largest size it has ever furnished for that country, and it believes about the largest that country ever bought from Americans. This same establishment notes a number of scattering foreign orders—one from Egypt, another from Italy and two or three machines for Mexico.

The midwinter banquet and meeting of the Manufacturers' Club may be held on a later date than that scheduled, the second Monday in the month. The Entertainment Committee is in correspondence with the most noted financiers of the times, with a view to having one or more present at the dinner to talk on the financial condition, with suggested remedy. The dinner will be given as usual at the Queen City Club.

The quarterly meeting and dinner of the Cincinnati branch of the National Metal Trades Association will be given at the Business Men's Club, Saturday evening, November 30. Some noted speakers will be in attendance, including Chas. P. Neill, United States Commissioner of Labor, who will speak on "Our Industrial Development;" Rev. Dudley W. Rhodes, whose subject is "The Relation of Trade to Morals."

Commissioner Robert Wuest of the National Metal Trades Association, President William Lodge of the Lodge



& Shipley Machine Tool Company, and Vice-President and Manager J. C. Hobart of the Triumph Electric Company will leave on December 3 for New York to attend the special meeting of the Administrative Council of the association, called to consider and pass on the work of the Constitutional Amendment Committee. Mr. Wuest will sail December 7 on the Friedrich der Grosse for a brief trip to southern Italy, and will be gone about six weeks.

Slight, but none the less portentous straws, showing the trend of the times to better things in the iron and steel trade are seen in the awakening and resumption of activity in various steel and iron foundries in this territory. A few days ago the vice-president of one of the newest of the Middle West steel foundries passed through Cincinnati en route home from the East, and while here, according to reliable authority, was offered a contract amounting to \$40,000. The offer was declined. The details are not yet obtainable, but it is presumed the buyer was figuring very low, counting on the stringency of the times to force the issue.

Word from Springfield tells of the resumption of work in the foundries of the P. P. Mast Company, and also those of the American Seeding Machine Company. The plants named are expected to add men gradually until eventually the full forces will be at work.

N. E. Whittaker, one of the principal stockholders of the Portsmouth Steel Company, and closely identified with the steel interests of Wheeling, W. Va., which own the Portsmouth plant, is quoted as saying that the business outlook could not be better from an order point of view, and that the plant will resume operations within a few weeks. The reason assigned for the suspension of work was inability to secure some important material. "We have orders enough to keep the Portsmouth plant going for a long time," said Senator Whittaker, who also emphasized his statement on the business situation that it is improving steadily and a normal condition one of the early probabilities.

It is given out by the officials of the Ohio Falls Iron Company at New Albany, Ind., that the company will continue in steady operation. The men in the puddling and bar mill laid off early in the month were reinstated November 18. The payroll runs \$20,000 semimonthly.

President William Fetzner of the National Iron Buyers' Association, recently formed at Dayton, Ohio, has named the Traffic Committee of that organization, in accordance with the outlined intentions of the organization to proceed aggressively and without delay. The members of this committee are as follows: E. E. Williamson, commissioner of the Cincinnati Receivers' and Shippers' Association; J. A. Maher of Middletown, Ohio; W. B. Moore of Dayton, Ohio; W. H. Stackhouse of Springfield, Ohio, and C. R. Houston of Cincinnati. These gentlemen will proceed at once to map out a form of contract covering shipments on iron. Mr. Fetzner will name the Contract Committee in a few days.

The Western Electric Company has taken the old quarters of the First National Bank, at Third and Walnut streets, Cincinnati, and will expend considerable money rearranging the building to conform to its needs. It will manufacture electric light fixtures.

The Louis Lipp Company, manufacturer of fine plumbing goods, &c., is at work restoring the burned portions of its big plant in Winton place, Cincinnati suburb. The fire, which started in one of the enameling departments, was confined to two rooms, and the company will be but temporarily embarrassed in attending to orders, and those only for bathtubs and similar enameled ware.

In the line of special punch and shear machinery manufacturers have felt very little effects of the prevailing depression. The Cincinnati Punch & Shear Company claims the distinction of being among the very few who have suffered nothing from cancellations; it has not had a single cancellation of a positive order. This company is working 44 hr. a week at the present time, and has laid off no machinists. The few men dispensed with were common laborers. Inquiries with this company have accumulated very perceptibly within the past few days, and the lack of new business for the past six or eight weeks operated only to permit of a more normal condition of the order book. On the shipping floor ready for way bills are several good sized orders. One of a 13,000-lb. multiple punch, a creation of the company's new department, goes to the new machine shop of the Jeffrey Mfg. Company, at Columbus; a small double punch to the Flour City Ornamental Iron Works Company, Minneapolis, Minn., and among some shipments of the last few days are a large double punching machine of 30,000 lb. to the West Virginia Rail Company, and several special tools for punching rails and splice bars with a straightening attachment, &c. Another, a single punching machine, was shipped to the Portsmouth Machine & Castings Company, Portsmouth, Ohio; another, a heavy 14-ft. bending roll, for direct connected motor drive to the Westinghouse Air Brake Company, at Wilmerding, Pa.

In the line of pumping machinery, local houses have as yet had little to complain of in business recession. At the plant of the John H. McGowan Company the payroll is still normal and the three nights a week shift has continued uninterrupted during the weeks of depression. Contracts

have just been entered at this establishment for installations of pumping machinery in the municipalities of St. Petersburg, Fla., capacity 3,000,000 gal., and at Raleigh, N. C., 4,000,000 gal.

A communication from the Bucyrus Steel Castings Company, Bucyrus, Ohio, says the recent fire that visited the establishment was insignificant, the only damage being loss to glassware, &c., not exceeding \$75. P. J. Carroll is president and general manager; Frank Donnenwirth, vice-president, and W. A. Blicke, secretary and treasurer. The output consists of miscellaneous and railroad steel castings.

Capitalists from Chicago are said to be interested in the rehabilitation of the Wyandot Producing & Refining Company, Crawford, Ohio, now owned and conducted by local people. The intention is to put in such machinery, engines, boilers, &c., as will increase the capacity of the plant to five times its present output, 100 bbl. a day.

## New England Machinery Market.

WORCESTER, MASS., November 26, 1907.

Almost every one in the machinery trade and in practically every manufacturing line is in better spirits. The volume of business transacted by the machinery dealers is a little more than it has been, although the change is not great enough to afford material grounds for encouragement in itself. But coupled with a trade that is no longer shrinking is an increasing confidence by the business world of New England, observed on all sides, in every line of trade, that the pendulum will soon start on its upward swing. Some bank men profess to be not so confident, but their opinions are not accepted by the manufacturer, as a rule, because he feels that he is in a better position to judge the situation broadly, in its many aspects as it affects industry, than is the man who sees but the financial side.

The salesmen of the machinery houses are closely in touch with conditions as they affect their line. It is significant that they are calmly waiting for the next few weeks to pass, in the belief that at the end of that time they will be booking orders in increasing number. Not a few of their customers are planning to make purchases as soon as they can feel sure of the money with which to pay the bills; collections are so poor that they do not care to assume new obligations until money begins to come in again in larger amounts. Some of them, stronger in immediate cash resources, are placing orders. One \$5000 and another \$7000 order have been booked, together with smaller lots, which may be considered quite numerous, everything considered.

It should not be understood, however, that the general expectation is for a resumption of business on the same scale as has prevailed the past two years. A good, fair business is looked for. Better conditions would be anticipated were it not for the fact that the Presidential campaign is at hand.

In the meantime the manufacturers are not receiving much new business. An order for machine tools is rather rare. Reduced working forces and shorter hours continue to be the rule, with some exceptions. The steam engine business is flat, but on the other hand the gasoline engine manufacturers of the State, in common with other sections of New England, are busy on both automobile and gas engine work, and also on engines for the numerous other uses to which the type is put, including farm work. The financial situation in Rhode Island is the worse because of the fact that one of its great trust companies is in the hands of receivers, tying up numerous bank accounts at a time when the money is most needed by its owners.

As against the general curtailment of production may be set the fact that some of the manufacturers of New England are planning to resume normal working hours or to take back men. It is understood that the financial conditions would not have to improve greatly to cause a real reaction in this respect, for in many cases reduction in manufacturing has been due entirely to this cause and not to lack of orders. The much quoted action of the American Graphophone Company in closing its works at Bridgeport, Conn., will be succeeded by the resumption of work on a large scale, for it is said that the factory will have to be rushed to catch up with orders. Much is expected as soon as such announcements begin to appear, as it is thought will be the case from now on. Every instance of the kind will have its effect for good in restoring public confidence. In some lines, however, notably machine tools, further curtailment is likely to precede increased production, as orders on hand are finished, for the manufacturers expect to be among the last to feel the return of good business. In the meantime stocks of all descriptions are getting lower.

The general condition of the machinery trade in Boston may be summed up in the statement of the Chandler & Farquhar Company of that city that its charges for machine

tools entered on the books for November to date exceed those of the entire month of October, and most of the November charges are for current business. In addition the company reports having received inquiries for sizable lots of tools, which promise early business.

The list of machine tools for the new shops of the Boston & Albany Railroad, at West Springfield, Mass., is now being figured. The list is a long one, aggregating many thousands of dollars, and is particularly welcome at this time.

The Whitney Mfg. Company, Hartford, Conn., manufacturer of chains and machinery, reports that it is operating its works full time, with full force, and that new business is being booked.

The strikes of machinists in New England have been dissipated by the condition of the labor market. Providence, R. I., and Fitchburg, Mass., have been the chief sufferers, especially the latter city, where an adequate supply of skilled workmen has been impossible to procure. All the good men required are now at work in both cities, and with the resumption of business it is not feared that the difficulty will be resumed.

The Bath Grinder Company, Fitchburg, manufacturer of grinding machines, has the largest force at work since it began business. Orders on the books are ample to keep the shop running full for some time to come, even if no more business were booked in the meantime.

It is announced that the Libbey & Dingley Company, Lewiston, Maine, has taken a 20-year lease of the water power at Littlefield, Maine, on the Little Androscoggin River, and will develop it for electric power. The plan is to build a concrete dam and install six large turbine water wheels and generators to develop 2000 hp. In addition, a generator will be installed at another power in the vicinity to develop 500 hp. The electricity will be conveyed in high potential current to Lewiston and Auburn, as a reserve supply. The work will be done next summer.

## Government Purchases.

WASHINGTON, D. C., November 26, 1907.

The Commanding Officer, Frankford Arsenal, Philadelphia, Pa., will purchase four Cleveland automatic turret machines, two screw machines, one universal milling machine and one 14-in. lathe.

The Isthmian Canal Commission will receive bids until December 21, circular No. 404, for four steel dump barges.

The following bids were opened November 19 for machinery for the navy yards:

Bidder 8, Alberger Pump Company, New York; 14, Brown Hoisting Machinery Company, New York; 25, Berlin Machine Works, Beloit, Wis.; 37, Camden Iron Works, Camden, N. J.; 41, Cleveland Punch & Drill Company, Cleveland, Ohio; 53, D'Olier Engineering Company, Philadelphia, Pa.; 56, Drew Machinery Agency, Manchester, N. H.; 58, Detrick & Harvey Machine Company, Baltimore, Md.; 67, J. A. Fay & Eagan Company, New York; 69, Fairbanks Company, Baltimore, Md.; 71, Frevert Machinery Company, New York; 76, General Electric Company, Schenectady, N. Y.; 93, Hilles & Jones Company, Wilmington, Del.; 96, Hendey Machine Company, Torrington, Conn.; 121, Philip M. Maloney, North Penn Junction, Pa.; 123, Manhattan Supply Company, New York; 125, Wm. B. Morshon & Co., Saginaw, Mich.; 138, Manning, Maxwell & Moore, New York; 147, National Electric Supply Company, Washington, D. C.; 151, Niles-Bement-Pond Company, New York; 161, Prentiss Tool & Supply Company, New York; 165, Rumsey Company, Seneca Falls, N. Y.; 180, Sellers & Co., Philadelphia, Pa.; 186, Sprague Electric Company, New York; 197, Stoeber Foundry & Mfg. Company, Myerstown, Pa.; 202, Toledo Machine & Tool Company, Toledo, Ohio; 209, Vermilye & Power, New York; 214, Wagner Electric Mfg. Company, St. Louis, Mo.; 217, Waterbury Tool Company, Waterbury, Conn.; 219, Western Electric Company, New York; 223, Henry R. Worthington, New York; 224, Westinghouse Electric & Mfg. Company, Baltimore, Md.

Class 51. One double angle and beam punch—Bidder 41, \$2080; 56, \$3910; 93, \$2430; 121, \$1830; 151, \$2449 and \$2373; 161, \$3890; 202, \$2750.

Class 52. Four variable speed gears—Bidder 217, \$6006.

Class 53. Twelve 2-ton trolley hoists—Bidder 14, \$1920; 123, \$1608; 209, \$828.

Class 54. One motor driven drilling, boring and milling machine—Bidder 58, \$3295; 69, \$3445; 138, \$3542; 151, \$5250; 161, \$3935; 180, \$6810.

Class 55. One combination band saw and rip saw—Bidder 25, \$1175; 67, \$1435; 125, \$1551.72.

Class 61. One motor driven pipe threading machine—Bidder 56, \$1273; 71, \$398; 138, \$1285; 161, \$773; 197, \$1400.

Class 63. One engine lathe—Bidder 96, \$842; 138, \$842; 151, \$821.

Class 71. One motor driven rotary or centrifugal pump—Bidder 8, \$2135; 37, \$2660; 53, \$2485; 147, \$3511; 165, \$2300; 186, \$2645; 223, \$3500.

Class 72. Four transformers and four motor generator sets—Bidder 76, \$5214; 147, \$360, part; 214, \$362.32, part; 219, \$50.64, part; 224, \$5129.

The Newport News Shipbuilding & Dry Dock Company, Newport News, Va., has been awarded contract for 12 steel barges at \$282,000, under opening of September 28, Circular No. 389, for supplies for the Isthmian Canal Commission.

Under opening of September 25, Circular No. 388, for machinery for the Isthmian Canal Commission, the Westinghouse Electric & Mfg. Company, Pittsburgh, Pa., has been awarded class 7, one tandem compound engine, \$2818.

The following awards have been made for supplies for the navy yards, bids for which were opened October 8:

Atlantic Works, Philadelphia, Pa., class 11, one planer and matcher, \$2000; class 12, one band sawing machine, \$525.

Oliver Machinery Company, New York, class 13, two molding, shaping, curving and dovetailing machines, \$1100.

American Wood Working Machinery Company, Rochester, N. Y., class 14, one band scroll and resawing machine, \$840; class 18, one sandpapering machine, \$1680.

J. A. Fay & Eagan Company, New York, class 16, one rip saw, \$946; class 17, one molding machine, \$1159.

Fairbanks Company, Philadelphia, Pa., class 19, one scroll saw, \$220.

The following awards have been made for machinery for the navy yards, under bids opened October 15:

Fairbanks Company, Boston, Mass., class 95, one universal duplex milling machine, \$1145; class 98, one speed lathe, \$214; class 100, one 14 in. by 10 ft. engine lathe, \$917; class 102, one 24-in. upright drill, \$382; class 103, one 36-in. upright drill, \$677; class 105, one twist drill wet grinder, \$195; class 109, one hydrostatic press, \$1045.

Manning, Maxwell & Moore, New York, class 94, one No. 3 universal milling machine, \$1600; class 99, one 12 in. by 6 ft. engine lathe, \$734; class 112, one open side planer, \$3475.

Walter H. Foster Company, New York, class 96, one bolt threading and nut tapping machine, \$668.

Jones & Lamson Machine Company, Springfield, Vt., class 97, one flat turret lathe, \$1800.

Pratt & Whitney Company, Hartford, Conn., class 101, one 16 in. by 10 ft. engine lathe, \$1760.

Niles-Bement-Pond Company, New York, class 104, two sensitive drills, \$250; class 111, one slotting machine, \$2213.

Frevert Machinery Company, New York, class 106, one drop apron tool grinder, \$348; class 107, one floor emery grinder, \$352; class 108, one buffing and strapping machine, \$320.

Newton Machine Tool Works, Philadelphia, Pa., class 110, one cold sawing machine, \$1433.

Under bids opened November 5 for supplies for the navy yards the Prentiss Tool & Supply Company, New York, has been awarded class 191, electric grinders, &c., \$1032.78.

Under opening of November 12 for supplies for the navy yards the Atlantic Company, Amesbury, Mass., has been awarded class 161, 12 motor dories, \$6108.

**Large Westinghouse Orders.**—The Westinghouse Machine Company and the Westinghouse Electric & Mfg. Company, East Pittsburgh, have recently secured orders for equipment amounting to about \$2,000,000. The most important order is from the San Francisco City Electric Company, which is preparing to add a 10,000-hp. turbo-generator to its power plant. This order, including the installation and equipment, such as switchboards, transformers and housings, will amount to \$1,000,000. A second order placed is that of the Los Angeles Department of Public Works, which is for water power generators of 750 hp. and 19 transformers. A third order is from the St. Louis & Iron Mountain Railroad for a number of engines and machines for the shops at Little Rock, Ark. The fourth order is from the Hawkeye Portland Cement Company, Harway, Iowa, for a 1000-hp. turbine engine. The fifth order is from the Cargenle Steel Company for electric motors, transformers, switchboards and other machinery for the Youngstown mills.

At the first annual banquet of the Gary Commercial Club, on Monday evening, November 25, the newly built city of Gary, Ind., was formally introduced as one of Indiana's important municipalities. Governor Hanly of Indiana was the guest of honor, and the officers of the Indiana Steel Company and the Illinois Steel Company were present. President Buffington, responding to the toast, "The United States Steel Corporation," reviewed the work undertaken in the construction of the Gary Works, which he stated would finally culminate in the erection of a plant that, when completed, will produce 2,500,000 tons of iron and steel a year and will employ 15,000 men.



# HARDWARE

THE IRON AGE, watchful in its guardianship of the interests of the trade, has constantly during the years in which the subject of parcels post has been under discussion, furnished its readers the earliest and fullest information in regard to the plans and arguments of the advocates of the carriage of merchandise by mail. In its columns there may thus be found from time to time a record of the various efforts and arguments put forth by the promoters of a merchandise post and the objections to such projects as wrong in practice, impracticable, and sure to be seriously disadvantageous to the country merchants, without corresponding benefit to the people at large. Prominent in the literature of the discussion are the letters of our Washington correspondent, whose exceptional opportunities for knowing what is going on at the national capital enables him to keep our readers advised not only as to the various forms of legislation proposed, but in regard to the under currents and influences, official or otherwise, which have so much to do in determining Congressional action. The admirable communication of S. R. Miles, which was recently published in these columns, and the clear and forcible arguments of A. C. Bartlett, which are given on another page of this issue, are only examples, important as these contributions are, of the fullness and the practical value of the matter relating to parcels post which is regularly presented to our readers.

In this issue there is a letter from a Pennsylvania Hardware merchant which is deserving of mention in this connection. It is not a formal discussion of the question and was written without any thought of its being published. The point, however, which he makes is the core of the whole matter. He loves not only his country, but his home town. While he is proud of his native State and extols public spirit, he emphasizes and exemplifies the duty of home pride, and of endeavoring to better conditions at home and in making the home town and village prosper. He is, in short, afraid of parcels post, because it will tend to make the business of the towns and villages decrease, and tend to degrade the life of the towns and villages, which should be the strength and glory of the country. The parcels post would unquestionably be to the advantage of the great catalogue houses and thus attract trade to the great cities, and would thus deprive local merchants of business which naturally belongs to them. In so far as it would do this it would be a public calamity.

This view of the matter cannot be too much emphasized by the opponents of parcels post. There are other considerations which bear with great force against the project and discredit it in any form in which it is prominently advocated. That it would militate against the business interests of all rural communities, of all villages and towns, and of all cities except a few of the very largest, is an argument which appeals to thinking men and to which there is no satisfactory answer. The attempt is vainly made to break its force by asserting that the parcels post would be advantageous to the small merchant, as enabling him to get goods by mail instead of by freight or express, as at present—a contention which opens the way for Mr. Miles' neat rejoinder that very soon the merchant would need to buy only in mailable quantities. But before that stage were reached what

would have become of the business of the town? The effort should be to build up rather than injure the small communities and municipalities, which are so essential to the wellbeing of the country and in which resides so large a part of the nation's virtue, intelligence and wealth.

Not only should local merchants insist on this view of the case and bring it home to Senators and Congressmen, and express it formally in resolutions at their conventions, but there should be the development of HOME TRADE ASSOCIATIONS in every town and village where they do not now exist. These associations would naturally start with the merchants of the place, who get together for the cultivation of a proper public spirit and the adoption of united measures for the general good, but the co-operation of professional men and the public generally should be solicited and secured. Their object should be the awakening of an ENTHUSIASM FOR THE HOME TOWN, the advancement of its interests, and the opposing of projects like the parcels post, which would militate so seriously and persistently against its welfare.

## Condition of Trade.

With the general return of a more normal condition of things in finance there is a better feeling in trade circles. With the retail merchants, who have not felt the monetary disturbance in the same way nor to the same degree as those identified with larger interests, business continues to run along in fair volume and with comparatively remote suggestion of the stringency of the money market in the commercial centers. The influences of the disordered conditions which have prevailed and which still prevail to a certain extent are, however, widely felt, and the towns and hamlets of the country, far removed by distance and type of life from the cities protected and dominated by clearing houses and bankers' associations, realize that there has been a sudden interruption of the prosperity which prevailed a short time ago. Delay in moving crops, whether of grain or cotton, largely on account of the financial situation; sluggishness if not difficulty in collections; a curtailment of expenditure on the part of the people, and especially of corporations, and the postponement of enterprises, are among the intimations to the merchants generally that for a time at least there is in business a less confident tone and a lessened volume. In the presence of these facts retail merchants like the jobbers are buying in only such quantities as are needed to supply present demands, without the usual liberal provision for future business requirements. Being, however, in close touch with the people, they are aware that there is general well-being and that practically all who are not lacking in thrift are well off, the agricultural classes being especially prosperous. The demands made upon manufacturers are, under existing conditions, naturally limited, and there is on the part of the trade some disposition to ask that the execution of back orders be deferred. With a moderate volume of business, prices hold up remarkably well, but there are here and there a good many revisions of price involving slight concessions. Manufacturers generally are in a waiting attitude, postponing efforts to market goods until the financial situation becomes more settled, and their main solicitude for

the time being is to secure funds to meet pay rolls and keep their plants in operation. With a view to keeping down expenditures and avoiding the accumulation of stock which might be a menace to the market and possibly need to be sold at lower figures than now ruling, there is a good deal of curtailment of production, with the accompanying laying off of hands and working shorter hours. The disposition among manufacturers generally is to be conservative and not force business by cutting prices. Some of the larger interests especially are endeavoring to work together in this matter. There is a general recognition that things in the money market are in a better condition than a week ago, there being, it would seem, as rapid a return to something like a normal state of things as could be expected, especially when it is remembered that the troubles which suddenly culminated were long developing, and that some of the causes which led to them have not ceased to operate. With the improvement in the situation there is a growing hope that after the opening of the new year, with still further improvement in general conditions, there will be a resumption of purchasing and enterprise. The following letter addressed by John C. Schmidt to the sales representatives of the Standard Chain Company, of which he is president, will be of interest as giving a sane view of the situation, and instructions, the spirit of which, may well be followed by the trade:

Operating as we do 10 factories in various cities and having many and valued customers among jobbers, manufacturers and railroads in every State and Territory of this broad land, we are in a position to realize and appreciate present unusual conditions. Personally, I have spent a good deal of time in the past weeks in comparing notes with other manufacturers, and exchanging views with bankers and leading merchants, endeavoring to analyze the present situation. Buyers have feared to place their usual orders, failing to receive their usual collections from the retail merchants, and, while not remitting themselves, express the hope that the manufacturer "will appreciate the present situation." There is no doubt about the manufacturer doing this, as payrolls must be met and supplies paid for.

In the past, when fear and distrust were shown in periods afterward called panics, each manufacturer made "confusion worse confounded" by endeavoring to operate his plant full and cut the price, thus producing more goods than his customers could consume and pay for.

In the present era of consolidation the great corporations, particularly in the iron and steel industries, have reversed this procedure by curtailing production and maintaining prices. This may seem cruel, but it is wisdom of the highest order; better have a surgical operation than a cancerous sore; better make what the people want and can pay for, than weaken one's resources by carrying unsalable stocks to be sold at ruinous prices.

Now, what is *your* duty in the present situation? Be optimistic; be cheerful; don't go about with a long face and look as if the world was going to come to an end. The first thing you do, go out and buy a carnation and put it in your buttonhole, and do this for 30 days, and I will pay for it. Let your customers see that you know that trade conditions will soon right themselves. The good Lord has blessed the farmers with ample crops and at high prices. They have plenty of money, and with \$70,000,000 of new gold coming into the country, our bank reserves will increase; with the lessening of premium and new currency issued, those who have selfishly hoarded currency will release it; and greater than all, with the slackening of industry, the demand for currency will rapidly decrease, and within six weeks at the farthest, Clearing House certificates and pay checks will be a memory. Tell your customers to buy only what they want and can pay for. We have made special prices which apply only to prompt shipments, and at which we

will take no contracts. Tell them to pay as they can, that is, remit in small amounts, and if necessary don't be too proud to give a short time note and then pay it when due; but don't expect a manufacturer to conduct his business successfully by telling his banker he has "large book accounts." Let him see some "evidence" of it.

Bear in mind the old adage, "It is always the darkest the hour before dawn," and with cheerful sanity you will find that conditions will soon change for the better.

### Chicago.

While the financial tension has not as a whole been notably relaxed, it is evident from the correspondence from outside points and the reports of traveling salesmen that the feeling of alarm, precipitated by the sudden change in monetary matters, is slowly giving way to more composed and hopeful views. In some instances reports of definite betterment have been received from customers in certain sections. This would indicate that the country banks are beginning to exercise a little more generous latitude in the payment of currency. When normal conditions are re-established it is believed that a good many deferred orders will come out. It will be remembered that the Hardware trade suffered but little diminution until money stringency became acute, and it is but reasonable to suppose that the consumptive demand thus abruptly shortened will, to a large extent, reappear when the chief restraining cause is removed. Meantime trade keeps up remarkably well under the circumstances. Present indications point to a volume of business for November that, though showing some decrease over the preceding month, will leave no wide gap in the comparative totals. It is, of course, too early to tell with what liberality orders will be made for Wire Cloth and Netting in response to the promulgation of prices for the coming season, which was made last week. Some fair sized orders have already been received, and, while there will possibly be more or less deliberation in the placing of orders, a normal average of business is expected. Reflecting the approach of the holiday season, some increase is noticed in the demand for goods suitable for Christmas trade. More and more attention is being given to this trade by Hardware dealers, who formerly regarded their stocks as unsuited to attract holiday shoppers. And so they were, but having become alive to the fact that Hardware stocks legitimately include many attractive articles sought at this season they are no longer indifferent to the avenue of profit thus opened, and as a result Hardware stores are, or should be, as busy at this time as any other. In heavy Hardware trade is of moderate volume and prices are well sustained. Orders are of the hand to mouth order, there being no disposition to anticipate future demand.

### NOTES ON PRICES.

**Wire Nails.**—The Wire Nail market shows but little change during the week. The volume of business continues very moderate. There is more call upon the jobbers to supply the immediate requirements of the smaller trade than there is upon the manufacturers, who are principally occupied in executing orders already on their books. Their business at the new prices is quite limited, but the market is regular in the matter of price owing largely to the conservative disposition on the part of the makers and their endeavor to prevent a break by forcing goods on the trade at the present time. There continues to be some cutting on the part of the jobbers, but this is not an important feature of the market as in most cases they are not overstocked on this line of goods. Quotations on base sizes are as follows, f.o.b. Pittsburgh, plus actual freight to point of delivery, 60 days, or 2 per cent. discount for cash in 10 days:

Carloads, to jobbers.....	\$2.05
Carload lots, to retail merchants.....	2.10

**New York.**—Requirements for small lots of Wire Nails, at store, are as large as is consistent with present conditions. Consumption in territory contributory to this point is comparatively light, and retail merchants



are not desirous of piling up stocks at this season. In some sections of this territory it is understood that Nails are being delivered at about store prices. Local jobbers and Nail houses are holding small lots at store at \$2.35 base, and in general this price is fairly well maintained.

**Chicago.**—Considering the unusual conditions trade has been affected less than might have been expected. The demand has fallen off considerably, it is true, but since it seems almost wholly attributable to the stoppage of the crop movement for lack of currency, relief in this respect will probably be followed by renewed buying later on. Orders may not be as heavy as heretofore, but a fair trade is looked for when the money embargo is lifted. Prices remain firm and shipments from mills continue to go forward in large volume. Quotations are as follows: \$2.23 in car lots to jobbers, and \$2.28 in car lots to retailers, with an advance of 5 cents for less than car lots from mills.

**Pittsburgh.**—In sympathy with other lines of Finished Iron and Steel, new demand for Wire Nails has shown a material falling off in the past two weeks and the amount of new business being placed is very light. This is due to lack of confidence on the part of the trade and also to the fact that the large jobbers covered their requirements ahead for some time, when the price was \$2 per keg. A good deal of business on contracts has been held up owing to tightness of money and other conditions, but this will come out again when the general situation has cleared up. Stocks of Wire Nails all over the country are light, and it is believed spring demand will be abnormally heavy, if general conditions are favorable at that time. Quotations on base sizes are as follows, f.o.b. Pittsburgh, plus actual freight to point of delivery, 60 days, or 2 per cent. discount for cash in 10 days:

Carloads, to jobbers.....	\$2.05
Carload lots, to retail merchants.....	2.10

**Cut Nails.**—The Cut Nail market is sluggish, and prices show signs of increased irregularity. Concessions in price are made by some manufacturers who are desirous of booking orders but most of the mills are keeping fairly well to what may be regarded as the regular prices. In a general way the market is represented by the quotation of \$2 to \$2.10 with freight added, but concessions are sometimes made either in the base price or in the freight added to cover delivery.

**New York.**—Local demand for Cut Nails is light, owing to moderate consumptive requirements. Quotations for small lots at store range from \$2.30 to \$2.35, base, the former price being more or less general.

**Chicago.**—The demand for Cut Nails has sensibly diminished. Jobbers' trade is restricted to small lot orders, which are by no means numerous. Mills are, however, not pressing for new business to the extent of offering strong price inducements, though buyers are able to secure concessions amounting to 5 cents a keg on prices heretofore quoted, which are herewith revised. Chicago quotations are as follows: Iron Cut Nails, carloads, to jobbers, \$2.33; to retailers, \$2.38; Steel, to jobbers, in carloads, \$2.23; to retailers, \$2.28.

**Pittsburgh.**—Very little new business is being placed and is only for small lots and actual needs. Some of the Cut Nail mills are very short of orders, and have either shut down or else are running to half capacity or less. On any business coming out, prices are usually shaded. We quote Steel Cut Nails at \$2 to \$2.05, f.o.b. Pittsburgh, for carload lots, and small lots at \$2.10, to which freight to destination is added. Iron Cut Nails are being held at about \$2.15, at mill.

**Barb Wire.**—The Barb Wire market feels to a marked degree the influence of existing conditions. The demand is quite limited. Prices are, however, well maintained, owing to the disposition of the larger producers in this line to work together and avoid a break in quotations. With a recovery from serious financial disturbance it is thought that a good demand will set in in the spring. Under existing conditions the mills are pursuing a very conservative course in manufacture and will in all probability enter on next season's trade with much smaller

stocks than usual. The possibility of the development of a shortage of Wire if business should resume its usual course is on this account suggested. Quotations are as follows, f.o.b. Pittsburgh, 60 days, or 2 per cent. discount for cash in 10 days:

	Fainted.	Gal.
Jobbers, carload lots.....	\$2.20	\$2.50
Retailers, carload lots.....	2.25	2.55
Retailers, less than carload lots.....	2.35	2.65

**Chicago.**—The fence building season has been prolonged throughout the West by continued mild weather. Not much new business is developing, but shipments of unfilled specifications against contracts are yet fairly heavy. Contracts for the coming season, which in some sections should be starting, are retarded by the present untoward financial conditions. We quote as follows: Jobbers, Chicago, car lots, Painted, \$2.38; Galvanized, \$2.68; to retailers, car lots, Painted, \$2.43; Galvanized, \$2.73; retailers, less than car lots, Painted, \$2.55; Galvanized, \$2.85; Staples, Bright, in car lots \$2.35; Galvanized, \$2.65; car lots, to retailers, 10 cents extra, with an additional 5 cents for less than car lots.

**Pittsburgh.**—The season is about over and no new tonnage of any amount is being placed. Contracts have been pretty well cleaned up and shipments by the mills are very light. We are advised that prices are being firmly maintained. Quotations are as follows, f.o.b. Pittsburgh, 60 days, or 2 per cent. discount for cash in 10 days:

	Fainted.	Gal.
Jobbers, carload lots.....	\$2.20	\$2.50
Retailers, carload lots.....	2.25	2.55
Retailers, less than carload lots.....	2.35	2.65

**Smooth Fence Wire.**—As manufacturers of Wire Fencing are deferring the placing of orders the demand for the Wire is light. The mills are, however, fairly occupied in shipping in the execution of orders booked some time ago. It is probable that the manufacturers will not enter on the new year with unduly heavy stocks, which might be a menace to the market and lead to an undue reduction in price, which the manufacturers are endeavoring to avoid. Quotations continue as before, f.o.b. Pittsburgh, 60 days, or 2 per cent. for cash in 10 days:

Jobbers, carload lots.....	\$1.90
Retailers, carload lots.....	1.95

**Chicago.**—The volume of new order business has been sharply reduced, though a fair amount of specifications against contract is coming forward. Owing to the difficulty in securing accustomed credit accommodations some postponements of shipment have been asked. In general, however, trade is satisfactory, considering the adverse circumstances under which business is being transacted. Quotations are as follows: In car lots, to jobbers, \$2.08 f.o.b. Chicago, and to retailers, \$2.15.

**Pittsburgh.**—The volume of new business being placed is very light, partly due to unfavorable conditions and also to the fact that the large trade covered ahead before the last advance in prices was made. Specifications against these contracts are coming in at only a fairly satisfactory rate, and a good deal of tonnage has been held up, with the result that shipments by the mills are much lighter than for some time. The market is firm, and we are advised prices are being rigidly held. Quotations for base numbers 6 to 9 are as follows, f.o.b. Pittsburgh, 60 days, or 2 per cent. discount for cash in 10 days:

Jobbers, carloads.....	\$1.90
Retailers, carloads.....	1.95

**Tinware, Enameled Ware, Galvanized Ware, Etc.**—Referring to Sheet Metal Ware generally it may be said that, except on Copper lines, prices remain steady on a reduced volume of business. This stability is attributed to the harmony known to exist among manufacturers as well as to the fact that the market for raw material used in this industry has been in fairly good condition.

**Bull Rings.**—Copper Bull Rings have again declined about 10 per cent. Revised prices may be represented by quotations of \$12 per gross for 2-in., \$14 for 2½-in. and \$18 for 3-in. Rings.

**Brass Butts.**—The expected reduction has been made by leading manufacturers of Brass Butts as a result of

the lower prices for Copper and Brass. The decline amounts to about 15 per cent., the new base discount being 55 per cent. This line is very close to the raw material and usually reflects promptly any considerable changes in the metal market. The present decline, however, has been long delayed, as manufacturers realized the futility of reducing prices when there was no prospect of stimulating business.

**Conductor Pipe.**—A condition approaching demoralization exists in the Conductor Pipe market, although the situation in the extreme East is decidedly better than in other parts of the country. Little business is being done, and large reductions in stocks have been generally made. Good judges express the opinion that buying must be resumed early in the year, and should be followed by a stiffening in price, provided there is no radical decline in the raw material.

**Rope.**—Some manufacturers regard demand for high grade Manila Rope as above normal at a time when the close of navigation is near at hand, but taking the line of cordage as a whole, business is quiet, and under these conditions the market is somewhat irregular, at the following base prices: Pure Manila, 11½ to 12½ cents; B. quality grades down to 9 to 9½ cents; Pure Sisal, 9 cents; lower grades Sisal, 7¼ to 7½ cents; No. 1 Jute, ¼ in. and up, 8 to 8½ cents; No. 2 Jute, 7½ to 8 cents. That not all Rope made of pure fiber is "first-class," as some printed matter circulated among the trade would lead merchants to believe, should be borne in mind. Fiber is graded more closely now than ever in the history of the trade, and while the material that some Rope is made of may be unmixed, it may be of low grade and of short fiber. It is asserted that Rope resembling Manila or Sisal can be made without a particle of the real article in either grade. This is made to order by manufacturers, and is the result of a demand for cheap Rope. The following list of cordage, with prices, sent out by a Western concern, is of interest as giving quotations on the wide range of goods it covers:

	Per pound basis.
Manila Rope, very best grade.....	12 c.
Manila Rope, second grade, pure Manila.....	11 c.
Manila Rope, Hardware grade, mixed Manila.....	9½ c.
Sisal Rope, very best grade.....	9½ c.
Sisal Rope, second grade.....	7½ c.
Jute Rope, Unrolled Paper Makers' Twine, Tube Rope.....	7½ c.
Unrolled Jute Tube Rope, Unrolled Jute Box Twine.....	8½ c.
Unrolled Jute Wall Paper Twine, laid.....	8½ c.
Laid Jute Hide Rope, Twisted Jute Bale Rope.....	7½ c.
Finished India Twines, bales and reels.....	8½ c.
Finished India Ham Twine, stranded.....	8½ c.
Tarred India Marline, two and three ply.....	8½ c.
Hemp, No. 4½ to No. 9 inclusive.....	10½ c.
Regular Tarred Sisal Lath Yarn, XX grade.....	7 c.
Best Pure Sisal Tarred Lath Yarn.....	8 c.
Sisal Hide Rope, Untarred Sisal Lath Yarn.....	7½ c.
Unrolled Sisal Hay and Bale Rope.....	8½ c.
Transmission Rope.....	15½ c.

**Sheet Zinc.**—Announcement is made under date, 25th inst., of a further reduction in Sheet Zinc amounting to 50 cents per 100 lb. The new base price is \$7 per 100 lb., in 600-lb. casks, subject to the following discounts:

	Cash	with order.	Quantity.	Total.
Carload lots.....	3	5	8	
9000-lb. lots.....	3	3	6	
6000-lb. lots.....	3	2	5	
3000-lb. lots.....	3	1	4	
Less than 3000 lb.....	3	0	3	

**Cast Iron Hardware.**—A slightly easier tone is observed in the market for Cast Iron Hardware, business being light and prices showing a tendency to weaken in the face of possible orders. Conditions doubtless reflect to some extent the action of the market for raw material.

**Window Glass.**—At the conclusion on the 23d inst., of a two days' meeting of the Wage Committees of the Window Glass Manufacturers' Protective Association of America and the Amalgamated Window Glass Workers' Association at Indianapolis, Ind., it is understood that a partial agreement was made that a sliding scale of wages shall be adopted—a scale based on the market price of the Glass. The committees are to meet again this week to settle the base price, that is, the price at which the sliding scale is to begin. It is reported that owing to financial stringency and the unsatisfactory working conditions, about one-quarter of the hand operating factories which had commenced making Glass have banked their fires, leaving in operation about a 700-pot capacity, and that

other factories have decided to close until a wage scale is accepted by the workmen under which manufacturers can operate without loss. The American Window Glass Company, making machine blown Glass, is reported to have produced Glass largely in excess of their output of last year, while demand has been much less than during 1906. There appears to be little danger that the amount of Glass produced will not be sufficient to supply demand in a satisfactory manner. Factory prices continue to sag and 90 and 20 and 2½ per cent. discount for single, and 90 and 25 and 2½ per cent. discount for double strength Glass are said to be occasionally shaded. Demand is light at this point, and prices more or less weak at prevailing quotations. Prices recommended by New York jobbers are as follows: Single strength 90 and 10 per cent. discount, double strength 90 and 20 per cent. discount. These discounts apply to purchases up to 50 boxes. Over 50 boxes the prices are 5 per cent. better.

**Linseed Oil.**—The Flax Seed market has advanced rapidly, following the recent slump in price, but Oil prices have not been affected by either extreme. Seed is being received in large quantities at Northwest shipping points, and one large water shipment has been made for Eastern consumption. The date for the close of navigation on the Great Lakes is but a week off, so that it is probable that the bulk of Seed required by Eastern crushers for Spring Oil demand will have to come by all rail. Both buyers and manufacturers of Oil are unwilling to enter into engagements for forward delivery: Demand at this point is for small lots to meet immediate requirements, which are moderate. In New York, State and Western Raw, in 5-bbl. lots, is quoted at 45 cents and City Raw at 47 cents per gallon. Boiled Oil is 1 cent advance on Raw Oil.

**Spirits Turpentine.**—The market during the week has been a declining one, prices having fallen off 3½ to 4 cents per gallon at Savannah. At present the Southern market has been stiffened by buying for export. The New York market is represented by the following quotations: Oil Barrels, 47½ to 48 cents; Machine Made Barrels, 48 to 48½ cents.

WALTER B. STEVENS & SON, 114 Chambers street, New York, manufacturers of a comprehensive line of Dog Furnishings, including Collars, Leads and kindred articles, are now manufacturing a line of Dog Boots. They have long made them on special order, but will now stock them in five sizes, regularly, from sizes for small pet dogs up to bird dog sizes; others wanted will be made as heretofore to order, according to specifications. The tops are made of genuine pig skin and the soles of white buckskin. Dog Boots are used largely for dogs with injured paws, being also put on dogs with fine silky hair to prevent them scratching hair off, as frequently occurs.

In a recent issue there was a reference to the Reinhart Varieties Company, Canton, Ohio, which is putting on the market a line of Embroidery Hoops fitted with a patent spring, the special feature of which is that the center of the spring presses against the cut ends of the hoop, thus preventing them from spreading outward. It should be stated that F. E. Kohler & Co., of Canton, own a controlling interest in the Reinhart Varieties Company, which is an assurance that customers will obtain satisfactory goods and fair treatment.

THE STOCK of the Lewis Bros. & Johnson Mercantile Company, Rocky Ford, Col., was recently damaged by smoke and water, the result of a fire, but the loss was fully covered by insurance, which has been paid. The company handles Shelf and Heavy Hardware, Stoves, Tinware, Agricultural Implements, Sporting Goods and Furniture, at wholesale and retail.

Mrs. S. W. Conant, Pana., Ill., has by purchase become sole owner of the Hardware and Stove business of the late S. W. Conant and will continue it at the same stand.



### THE NEED OF CONFIDENCE.

**W**E are in receipt of the following communication from the Avery Stamping Company, Cleveland, Ohio, in which the need of confidence at this time is admirably enforced. It will be observed that allusion is made to what is perhaps the most practical way of showing confidence, namely, paying bills promptly as they mature:

*Have confidence.* We believe this is good advice for all of us. We hope it may not be considered impertinent by any one, although it means that we will have to pay closer attention than ever to our knitting. Ninety-five per cent. of all business is done on credit, on confidence, but at the same time, in our judgment, it should be conducted the same as banking. If your customers sign a note for 30 days they know that they cannot interpret it to mean 60 days, and they cannot get a loan at the bank without giving security, sometimes double the amount of the desired loan. Yet when you sell them some goods you get only their oral promise that the bill will be paid. Those goods represent your capital, consequently you cannot afford to allow it to be used without assurance that it will come back to you when due, any more than a bank can do so.

While we must have confidence in our fellowmen, we must expect them to respect their word by living up to it just the same as if they had signed a note or bond. If you put off your creditors they are forced to do the same, and so on back to the original source of purchase. It is wrong for any one to hold every dollar with the determination of not letting go of it. We must speak, write, inspire confidence, and show our confidence by writing checks as our bills mature. A jingle occurs to us which we think happy and apt just at this time:

*Every little added to the little that you have, makes that little just that much more.*

And we think it will do much good if we adopt a confident air, which is half the fight in these days.

### KENTUCKY HARDWARE CONVENTION.

**T**HE annual convention of the Kentucky Retail Hardware and Stove Dealers' Association will be held in Louisville February 11, 12, 13, next, and arrangements have been made on about the same lines as last year, with headquarters at the Galt House. Manufacturers and jobbers desiring to make exhibits should make early application to the manager of the Galt House. Ample time will be allowed for the inspection of exhibits, and, with the exception of the executive sessions, manufacturers and other visitors will be welcome to attend and take part in the discussions. The preparation of the programme, which will be attractively got up, is now under way, and manufacturers and jobbers desiring advertising space in it may obtain full particulars from John R. Sower, secretary, Frankfort, Ky.

### AMONG THE HARDWARE TRADE.

S. C. Scott has engaged in the Hardware, Stove, Implement, Paint and Furniture business, at Burlington, Wash.

Logan Bros., Havensville, Kan., have sold their Hardware, Stove, Implement and Vehicle business to Witter & McKee.

William Schofield, New Lexington, Ohio, has just added a line of Hardware to his stock of Harness, &c.

C. R. Hinman succeeds Hinman & Smith Hardware Company, Newman Grove, Neb., having bought the interest of his former partner.

The Pomeroy Hardware & Implement Company, Pomeroy, Wash., recently incorporated, handles Shelf Hardware, Stoves, Tinware, Agricultural Implements, Paints, Oils, Sporting and Athletic Goods.

The Wales-Hunt Hardware Company has purchased the stock of Dougherty Bros., at Wabash, Ind., and will carry on the business in Converse, Ind., handling Shelf and Heavy Hardware, Stoves, Tinware, Agricultural Implements, Paints, Oils and Sporting Goods.

J. C. Woolridge has recently opened a store in Hedley, Texas, the stock including Builders' and Shelf Hardware, Paints and Oils.

B. W. Slocum has purchased the interest of the C. J. Fenton estate in the firm of Fenton & Brown, Oakes, N. D., and the firm name has been changed to Brown & Slocum. The lines handled include general Hardware, Stoves, Tinware, Agricultural Implements, &c.

The Austin Hardware Company has been incorporated at Terre Haute, Ind., with \$30,000 capital stock. The directors are Christian A. Hansing, Arthur Jobe, Edward J. Kadel, Nicholas Kadel and Victor E. Schuh.

O. C. Bradford & Co. have been incorporated at Marion, Ind., with \$15,000 capital stock, to do a Hardware business. The directors are O. C., J. T. and W. J. Bradford.

J. L. & T. O. Spillers have purchased the Hardware business of L. M. Cordry, Otterville, Mo.

Fred. Mead has purchased the Hardware business of E. H. Ziebarth, in Wilcox, Neb.

C. V. Orendorff & Co., Yates Center, Kan., have closed out the Hardware department of their business.

C. Brooks has removed his stock of Hardware and Queensware from Neosho Falls to Garnett, Kan.

The store of Sevierville Hardware Company, Sevierville, Tenn., has been destroyed by fire. The company will not rebuild before spring.

O. E. Hoflund has purchased the business of D. Bruskill, in Hawarden, Iowa, and will handle Shelf Hardware, Stoves, Tinware, Sporting Goods and Sewing Machines. Plumbing and furnace work will also be looked after.

A. M. Kahn & Co. have engaged in business in Bolivar, Tenn., and are handling Shelf Hardware, Tinware, Sporting and Athletic Goods and Queensware.

George Lepley, Jr., has purchased the business of H. C. Chapin, in Union, Iowa, covering Shelf and Heavy Hardware, Stoves, Tinware, Oils, Sporting Goods, Furnaces, Plumbing, &c.

The Hardware store of J. W. Bush, in Oakes, N. D., was recently damaged by fire to the extent of \$4000.

The Wolford Implement Company, Wolford, N. D., has been incorporated with a capital of \$25,000. This company succeeds Berkness & Knutsen, there being, however, no change in ownership or management. The officers are O. B. Berkness, president; J. C. Ness, secretary; O. T. Knutsen, vice-president and treasurer.

CHANDLER & FARQUHAR COMPANY, Boston, Mass., has just issued catalogue No. 110, covering an extensive line of Tools and supplies for machinists, automobilists and metal workers, in all departments. The book is very complete and well arranged, being fully illustrated and containing all lists, &c., which customers would need to refer to. The company handles a high class of goods, being local representative for a number of leading Tool manufacturers.

SIXTY YEARS of active, efficient and uninterrupted service in the employ of one concern is a record of which few men can boast. One of the few is Edwin C. Clay, heating engineer of the Walworth Mfg. Company, Boston, Mass. Mr. Clay, who is 74 years old, completed his sixtieth year of service on the 15th inst., and as a reminder of the occasion was presented with a handsome loving cup by his fellow employees.

## THANKSGIVING WINDOW DISPLAY

O. C. ALDERMAN, Springfield, Mass., is an enterprising Hardwareman who has a well arranged store with a clean, attractive stock. The store is prominently located on the principal business artery of the city and much attention is wisely devoted to its show win-



Thanksgiving Window Display of O. C. Alderman.

dows which are daily passed by many thousands of people. The windows are dressed frequently and are always occupied by seasonable displays. Herewith is reproduced a Thanksgiving window recently installed, which commands favorable attention. Carving sets are, of course, the leading feature, and are effectively set off



Stand Used for Exhibiting Carving Sets.

on black painted stands constructed as shown in Fig. 2. These stands were devised especially for such use and are found well adapted to the display of several lines. Other goods making up the display include fancy Cork Screws, Food Choppers, &c.

THE CORTLANDT STREET HARDWARE COMPANY, 74-76 Cortlandt street, New York City, S. J. Griswold, president, is the name of a new house just established to retail Hardware, House Furnishings, Tools, Cutlery, Silverware, Glassware, Office Supplies, Paints and Oils and related goods. The store was opened for business November 14 with a well assorted stock. The company occupies the street floor, basement and a mezzanine floor above, with offices upstairs. Located at the corner of Washington and Cortlandt streets, the stand is but a short block from the Pennsylvania Railroad Ferry, and advantage will be taken of the opportunity to reach the passing throngs through the medium of outside stands stocked with staples and specialties of suitable selection.

J. N. JOHNSTON & Co., Waurika, Okla., recently suffered a fire loss of \$15,000. The firm handles Shelf and Heavy Hardware, Stoves, Tinware, Paints and Oils.

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## Holiday Trade in The Hardware Store.

Fourth Article.

### CHRISTMAS ADVERTISING.

FROM A MISSOURI HARDWAREMAN.

**H**AVE you ever stopped to consider the magic contained in that word Christmas? It most certainly is a word to conjure holiday trade with. When a Stove or a Lamp or a Food Chopper becomes a Christmas Stove, a Christmas Lamp or a Christmas Food Chopper, it is changed at once from an ordinary, everyday article of Hardware merchandise to a medium for the expression of love, friendship and good cheer, and takes on a marked attractiveness that it simply cannot possess at any other season.

Because of the added charm which it gives, its seasonableness and the increased incentive for buying, the word Christmas should be used very liberally in all your advertising from now on. If you want your full share of the coming Christmas trade it is essential you should use it in connection with every article in your varied stock that would or should be used as a Christmas gift.

#### Useful Gifts Are Appreciated.

In considering your Christmas campaign of advertising it should be remembered that goods of every day use in one family and which they regard as actual necessities

#### A Gift is None the Less Welcome

because it's practical and will do somebody some real good.

The Run Easy Carpet Sweeper of to-day represents the highest point of development in the sweeper art and logically so.

Has four rubber tired iron wheels, automatic, independent dump for each pan. Best quality twelve inch brush. Handle will stand upright when not in use.

When you buy your wife a Run Easy Carpet Sweeper she will be fully satisfied. Price \$2.50.

#### A Gift for the Thrifty Housewife.

No woman ever used a Rotary Washer without immediately finding out that it adds to her purse, subtracts from her household worries and compounds her interests in life.

You certainly owe it to your wife to investigate the Rotary Washer, and help lighten her household duties.

Come in and let us demonstrate it to you—let us show you its construction, and just how easily it works.

Natural finish and varnished. Corrugated wood inside and bottom. Wood pin wheels.

Prices, \$7.50 and \$8.00.

#### Gift Stoves

are appropriate, durable and inexpensive.

Those who contemplate giving Stoves for Christmas will find our immense stock and Low Prices great aids to satisfactory selection.

Our reputation guarantees reliability, no matter how little the price may be.

The — is the most satisfactory, economical, fuel saving Heater made.

Prices, \$8.50 and up.

Stoves held for delivery at any desired time.

#### 50 Very Interesting Lamps.

This year let us flood the Dining-Room and Parlor with the soft, rich, pleasing light of the Liberty Lamp, and get rid of your light troubles once and for all.

The Liberty Lamp makes a splendid present, and gives years of satisfaction.

There must be one or two among your family or friends to whom you give this year who would appreciate such a useful present better than anything else.

Prices, \$2.50 to \$7.50.

*Substance of Business-Bringing Christmas Advertisements Suggested by a Missouri Hardwareman.*

and hardly appropriate as Christmas gifts, would in some other family not so well off be considered highly appropriate and an expression of regard and thoughtfulness on the part of the donor. To many a housewife who does her own work and has never known the time and labor saving convenience of a Washing Machine, or even a Carpet Sweeper, either of these articles would be welcomed with as much warmth as an Automobile might elicit where horses, servants, Washing Machines and Carpet Sweepers are taken as a matter of course.

#### Begin Now.

If you have not already begun your holiday advertising and holiday window displays begin now. The purchase of Christmas presents is often planned a long time in advance, and the Hardware merchant who is first or among the first to offer helpful suggestions through good advertising and display will certainly win out a long way ahead of those who neglect this important work, because it is so easily put off until the last moment.

#### Give Prices and Particulars.

Or perhaps you have the idea that you will do just about so much Christmas business whether you advertise or not, and that at most all you need to do is to print a long list of suitable gift articles without price or comment. That is wrong. This is the time of all times when all readers want prices, descriptions and particulars, and the more fully and faithfully these are given the better your Christmas business will be.

And don't forget to make your show windows do their share by dressing them attractively, being careful, if you deal in high and low priced goods, not to let the high priced goods predominate.

#### Study the Goods Offered.

Remember also that half of the prospective buyers who will respond to your Christmas advertising are uncertain themselves as to just what they want in the way of gifts. They know they want to purchase something in the way of a present, and it is the merchant who should know what will suit. Therefore, he should, and must, in a way, take the initiative in the transaction, giving suggestions and such information about goods as will aid the customer in making a proper selection.

If you know your business, if you love your business like a parent does its offspring, then you should be able to put enough enthusiasm into your advertisements, into your window displays, and into your store talk, as will keep your Christmas trade right up to the same high selling fever pitch as yourself.

#### The Christmas Spirit.

The heart and soul of your holiday advertising should come from the genial spirit of Christmas cheer and good will, which should prevail throughout the whole store. Think of the Christmas stocking and how much trade you are going to contribute to have it crammed full to bursting with real, good, practical, useful Christmas gifts.

Right now is the time to make up your mind that Christmas trade is not a thing foreign to your business. It is telling your friends all the good things about your business they ought to know. Successful Christmas ad-

vertising is enthusiasm, good cheer, pluck, aggressiveness, and all the other good holiday qualities which ring true and genuine and sincere. Christmas advertising is a brain child which you yourself create, and which if sincerely and intelligently spread will multiply your Christmas trade in a manner that will be startling.

By the liberal use of your local papers you can reach your market more effectively than in any other way. Therein you can deliver your story to the family circle under the evening lamp and after the dinner table has been cleared away. Tell your business story as in a letter from Santa Claus to countless Christmas givers everywhere in your section. And this telling, if direct, interesting and effective, if filled with good holiday cheer, will build up your Christmas trade and give to your store a deserved fame for progressiveness and up to dateness.

#### Dignity and Conviction.

But bear in mind that all newspaper advertising is merely salesmanship on paper, and instead of spoken language by word of mouth, you use the medium of both paper and printer's ink. Above all, try to make your advertisement dignified in both matter and manner. Give it an appearance that will attract favorable attention and get a full hearing. Have something to say that will concentrate attention on the goods and sway the reader into your store.

Finally, see that the holiday spirit of helpfulness and good cheer is properly infused into your selling force. Do everything you can to make Christmas buying easier and more satisfactory at your store than at any other store in town.

## INCREASING THE HARDWARE STORE'S CHRISTMAS TRADE.

### POINTERS FROM A TRAVELING SALESMAN.

IT has been the writer's observation that the average Hardware dealer could and should more favorably attract the attention of Christmas shoppers. That many merchants do not obtain a greater proportion of what is spent during the holiday season is largely due to the mistaken idea that Hardware is not a holiday line.

#### Make the Store Attractive.

How generally do Hardwaremen follow the methods of other merchants to attract Christmas trade? The answer usually is that the nature of the stock will not permit it. The radical changes from old time methods recently made by enterprising merchants show conclusively what can be done to make the Hardware store one of the most attractive in the community.

The dealer with old methods says the stock is a dirty one and cannot be used to dress up the store so that the display will attract; but that is a wrong impression. Practically no other stock has the variety of form, color

Add to the stock an assortment of serviceable household novelties. The Christmas shopper frequently wants something that is unusual, as the novelty adds to the value of the gift in the eyes of the recipient.

A limited line of table silver has been found a desirable addition to the Christmas stock, even if it is discontinued after the holiday season.

As a large part of Christmas purchases are for the benefit of children, a prominent place should be given in the show windows to juvenile lines, so that the attention of both the children and parents will be attracted.

## AN IDEA FOR HOLIDAY ADVERTISING.

A MEDIUM of advertising designed to assist the retail trade in pushing holiday goods is being offered by the Norvell-Shapleigh Hardware Company, St. Louis, Mo., to the retail trade in the form of an illustrated sheet circular, folded in such a way that it may be addressed and mailed without envelope or wrapper. The circular, 24 by 36 in. in size, is printed on both sides and includes over 200 clearly illustrated and described



One Side of Illustrated Holiday Goods Circular Issued by Norvell-Shapleigh Hardware Company.—Actual Size, 24 x 36 In.

and lustre as Hardware, nor is capable of being grouped in more effective display in either the small or large store.

#### Plenty of Light.

The new type of Hardwareman first cleans up his store, and he is then ready to turn into his store more light, both natural and artificial. Modern show windows give the proper light, afford increased opportunities for display, and attract the attention of the public. They make good advertising. Plenty of artificial light in windows and storeroom is very important at this season of the year and pays good dividends for the increased expense.

#### Rearranges Stock.

Next the arrangement of stock needs attention. A merchant with natural pride in his business does not require special talent to obtain very attractive displays; nor is it necessary to have modern shelving and show-cases, although they are important and are considered a good investment.

#### Lines to Display.

The Christmas display should give prominent place to Household Articles, Cutlery, Sporting Goods, Mechanics' Tools, &c. Enamelled Kitchen Utensils, Roasting Pans, &c., are good sellers, and can be displayed effectively. The wives and children of many mechanics purchase tools for the father or brothers, and, in the usual spirit of the season, buy a better grade than the mechanic himself would purchase.

articles, all of which have been carefully selected to meet the demands of the holiday trade.

These circulars are supplied without charge to retail merchants with orders for goods, the quantity furnished depending upon the amount of goods ordered. Additional circulars when wanted are furnished practically at cost. Being intended for distribution to the consumer, the retail selling price for each article is given in plain figures. The prices named allow a good margin of profit for the dealer, and for this reason goods not carried in stock can, if necessary, be ordered for quick delivery by express.

The general idea embraced in this plan of advertising is to put before the customers of the retail merchant an attractive list of goods that will offer tempting suggestions to the Christmas shopper. By means of this circular a wide range of articles supplied by Hardware merchants whose stocks, by the way, are often overlooked as available sources of supply for such goods—is presented in such a way that they may be leisurely examined at home. The list includes Silverware, Sporting Goods, Lamps, Clocks, Sleds, and many other goods that should find ready sale within the next few weeks. That consumers are successfully reached by advertising of this character has been amply demonstrated, and it is suggested that the merchant may profit by the employment of such methods in his own behalf. The company states that it will on request send sample of the circular to any Hardware merchant in the country.



## THE CORBIN CLUB HOUSE FOR EMPLOYEES.

**T**HE progressive spirit of the age is evidenced in no better way among our manufacturing concerns than by the tendency of their executive heads to promote a friendly feeling between themselves and their employees, and to encourage the organization and continuance of foremen's clubs for social purposes as well as in the interest of business. Among the first to take this matter up in the great Hardware manufacturing center of New Britain, Conn., were P. & F. Corbin and the Corbin Cabinet Lock Company, who have just opened a new club house, fitted up and completely furnished by the companies, for the enjoyment of club life by their men.

At the opening of the house, which took place on Wednesday evening, 20th inst., Charles H. Parsons, first vice-president of P. & F. Corbin, and well and favorably known throughout the Hardware world, acted as master of ceremonies, and introduced Philip Corbin, president of the company and its head and active manager since it was founded, over half a century ago. Mr. Corbin responded most fittingly, referring to the time when he was a foreman, working for others, and assuring the men that he always did and always would appreciate the faithful and conscientious work of his assistants in the business. He presented the keys of the club house to the presidents of the clubs, who responded with thanks and appreciation. A reception to the foremen followed, after which there was a general good time between the officials and the heads of the departments, promoted by Mr. Parsons informally announcing: "Boys, the house is yours; have a good time." Refreshments and music were provided and there was general satisfaction felt and expressed by all participants at the handsome way in which the companies had provided for the pleasure of their men.

## W. H. BENNETT REAPPOINTED MANAGER.

**W.** H. BENNETT has been reappointed manager of the Chicago office of the Reading Hardware Company, Reading, Pa., and will enter upon his duties January 1. This office was originally opened by Mr. Bennett, who continued in its management for nearly 20 years, retiring about two years ago because other interests demanded his attention. About the time of his retirement the carrying of a stock in connection with the Chicago office was discontinued, and for the past two years shipments have been made direct from the factory. In order better to serve the trade and facilitate the prompt execution of orders in that territory it has been decided to re-establish the warehouse and carry a full and complete stock in Chicago. The office and warehouse is located at 105 Lake street.

## CATALOGUE OF GOODWIN & KINTZ COMPANY.

**T**HE GOODWIN & KINTZ COMPANY, Winsted, Conn., has issued its catalogue No. 31, an imposing edition 11 x 14 in. in size, handsomely gotten up and richly and profusely illustrated. The catalogue covers a complete and elaborate line of lighting Fixtures, Gas and Electric Portables, Newels and Electroliers; also Art Glass Domes, Shades, &c. The company's lines of Kerosene Lamps and Metal Fancy Goods are covered by other catalogues.

THE CORBIN CABINET LOCK COMPANY, New Britain, Conn., has recently issued a special catalogue devoted entirely to Suit Case Locks and Trimmings. The get-up of the catalogue is noticeable, the design being a clever suggestion of a suit case in natural color, with reinforced corners and straps. The title is affixed in the form of a hotel poster. The publication is an interesting example of the tendency of manufacturers to specialize, and it is rather surprising to learn that the company has sufficient customers who are interested in Dress Suit Case Trimmings to justify getting up a catalogue devoted solely to that line. It is distributed not only to some thousand or more houses in this country, but to a

considerable number of foreign customers in various parts of the World, especially Japan, where the Locks are used on Basket Suit Cases.

## PRICE-LISTS, CIRCULARS, Etc.

*Manufacturers in Hardware and related lines are requested to send us copies of catalogues, price-lists, &c., for our Catalogue Department in New York; and at the same time to call attention to any new goods or additions to their lines, of which appropriate mention will be made, besides the brief reference to the catalogue or price-list in this column.*

SUN MFG. COMPANY, Columbus, Ohio: Catalogue No. 32, relating to Showcases, of which a number of floor display Cases are shown; also Cashier's Desk, Showcase and Cash Drawer combined.

DRAPER COMPANY, Hopedale, Mass.: Screw department catalogue, relating to special Screws and machine parts for Guns, Sewing Machines, Typewriters, Electrical Instruments, &c.; also regular Set and Cap Screws, all milled from bar or rod of iron, steel, brass or other material. While most of the work the company is making would be classed as special, price-lists for some of the regular lines of Set and Cap Screws are given.

TURNER & SEYMOUR MFG. COMPANY, Torrington, Conn.: Large sized catalogue of 133 pages, devoted to Upholstery Hardware. This includes Brass Cornices, Curtain Rods, Pole Ends, Curtain Pole Brackets, Pole Joints, Sockets and Traverse Pulleys, Drapery Hooks, Curtain Poles, Brackets and Sockets, Stair Rods and Buttons, Tassel Hooks, Curtain Bands and Chains, Brass Pulleys, Picture Nails and Hooks, Upholsterers' and Fancy Nails, Tacks, Screws, Bright Wire Goods, Jack, Safety, Basin, Bath and Wash Tray Chains, Towel Bars, &c.

V. A. SMITH & Co., 926 Cuyler avenue, Chicago: Illustrated price-list of Registers, including black Registers, faces and borders, white Registers and faces, Oxidized Copper Registers, faces and borders, Convex Registers, Round Faces and Borders, &c.

SARGENT & Co., 94 Center street, New York, and New Haven, Conn.: Thirty-two-page illustrated descriptive catalogue of Sargent's Union Lock Sets, together with kindred goods, including Door Checks, Push Plates and other kinds of door and window trim.

MARSHALL-WELLS HARDWARE COMPANY, Duluth, Minn.: Special Stove catalogue referring to Niagara and other brands of Stoves and Ranges, Oil Stoves and Heaters, Gas and Gasoline Stoves, Fireplaces, Mantels, &c. The catalogue is got up in the substantial and effective style which marks the company's other printed matter, and contains much in the way of selling aids and suggestions for retail merchants.

MANHATTAN ELECTRICAL SUPPLY COMPANY, 17 Park place and 14 Murray street, New York: Attractive two-color circular, referring to Electrical Specialties for the holidays. The company makes good use of its advertising phrase, "Something electrical for everybody."

CANADIAN SHOVEL & TOOL COMPANY, Hamilton, Canada: Illustrated catalogue of Shovels, Spades, Scoops and Post, Drain and Ditching Tools.

## THE MEMPHIS CONVENTIONS.

**A**S already noted, Memphis, Tenn., has been selected as the scene of the annual meetings of the American Hardware Manufacturers' Association and National Hardware Association, which will be held in October, 1908. The Hardware interests of the city have already appointed a number of committees, which will look after the comfort and entertainment of the large body of manufacturers and jobbers who will attend the conventions. A canvass of the hotels of the city, with a view to reserving accommodations, has been made, and the facilities are found to be ample and excellent. This is the first time the two associations have arranged to meet so far South since the gathering in New Orleans about six years ago, and the trade in Memphis will spare no effort to make the occasion a notable one.

## THE PARCELS POST QUESTION.

### A. C. Bartlett's Objections to Parcels Post.

THE following letter from A. C. Bartlett, president of Hibbard, Spencer, Bartlett & Co., Chicago, will be of special interest, containing as it does a clear and forcible statement of the objections to the inauguration of a parcels post. The letter, which is herewith given in full, was addressed to the editor of the *Chicago Record-Herald*, and much of it was published in its issue, 12th inst.:

The Sunday issue of your paper contained an interview with Postmaster-General Meyer, in which "he sets right certain misunderstandings which may have resulted from reports of his address before the Association of Commerce" upon the subject of "Postal Savings Banks" and an extension of the business of the parcels post. In this interview he says:

Mr. Bartlett, in his remarks, stated that he could see no serious objection to a general reduction on parcel post throughout the country, from 16 to 12 cents per pound, but that he objected to the rural delivery parcels post because he considered it class legislation. He also labored under the delusion that it would be a tax on the people and would create a large deficit. We are able to show that, far from creating a deficit, it would increase the revenue of the postal service and tend to make the rural routes eventually self-supporting.

This, perhaps, calls for a fuller expression, through the columns of your paper, of the views which I undertook to set forth on that occasion.

I wish to say that the Postmaster-General made a very clear and comprehensive statement of his parcels post plan. That plan embraced but two material changes in our present postal rules and methods—viz.:

1. A reduction of rates upon merchandise destined to points in the United States, from 16 to 12 cents per pound, and increasing the limit of weight from 4 to 11 lb.
2. Establishing a merchandise delivery system along the rural free delivery routes upon such packages only as originate upon the particular route reaching the consignee; and making the rates for such delivery 5 cents for the first pound and 2 cents for each additional pound, or the sum of 25 cents for 11 lb.

#### The Reason Given for the First Change

was the fact that we have reciprocal arrangements with 32 foreign countries on the proposed basis; 10 of which countries permit the sending of 4 lb., and 22 the sending of 11 lb. at the 12-cent rate. The contention of the Postmaster-General was that any of our own people should have the privilege of sending a package, say, from Chicago to Joliet, as cheaply as he could send a corresponding package from Chicago to Liverpool—and the position was certainly well taken.

My response, in effect, was that the arrangement with foreign countries is seemingly one of "I tickle you and you tickle me," but that if the United States Government could, from a financial standpoint, consistently make the reduction suggested, there was no evident reason why it should not be done, although such change might not be of vital importance. Attention was called to the fact that the 22 countries to which the 11 lb. rule applies did not include one upon the map of Europe, but were of the order of the Windward and Leeward Islands, &c. To be more explicit, those countries are the following:

Jamaica, Barbadoes, the Bahamas, British Honduras, Guatemala, Republic of Honduras, Mexico, the Leeward Islands, New Zealand, Nicaragua, Republic of Colombia, Costa Rica, the Danish West India Islands—St. Thomas, St. Croix and St. John—British Guiana, the Windward Islands, Newfoundland, Salvador and Trinidad.

Germany has a 4 lb. 6 ounce limit. While domestic rates should undoubtedly have some relationship to foreign rates, the weight limits should also, quite possibly, be considered in the adjustment.

#### Function of the Government.

The main objection which the members of the Association of Commerce offer is, I take it, to the second division of the Postmaster-General's plan, and it was to that division I particularly addressed myself. I held that it is the function and duty of the Government—national, State or municipal—to provide public schools for children, a quick and cheap means of communication by letter, and an inexpensive method for the distribution of papers, magazines and books throughout the entire country, because all of these efforts are in the direction of education and a better and higher civilization.

#### Class Legislation.

When it comes to Uncle Sam contracting to do the inland express or drayage of merchandise for less than 10,000,000 of our people at an expense, in part, chargeable to the entire 85,000,000, that is an entirely different

proposition and has no relation to the postal service of this country. As the Postmaster-General says, I declared this would be class legislation. And I further stated I did not believe that those to be the immediate beneficiaries would, when they fully understood the question, be willing to have the general public pay a portion of their household expenses. Our American people have not so lost the spirit of independence bequeathed to them by their pioneering ancestors, nor the virility which renders them self-supporting as to be willing to accept that kind of public assistance.

#### The Matter of Deficit.

The Postmaster-General argued that the addition of this country express business (carrying packages for a small, flat fee any distance from 1 to 30 miles) would not increase the deficit of the Post Office Department, but that seems to be a matter of conjecture and a conclusion hardly warranted by records of past Governmental business. The prophecy was apparently based upon an inference that the decreasing deficit of the Post Office Department is due to the opening of rural free delivery routes, while the opponents of parcels post declare that without those routes, the deficit of between \$5,000,000 and \$10,000,000 in 1906 would have been changed to a profit of \$10,000,000 to \$15,000,000. This is not an argument from my standpoint, at least, against rural free delivery of mail matter, for I believe that such should be maintained and extended at any reasonable cost to the Government.

#### How P. O. Expenses Are Figured.

The Department manner of figuring expenses differs widely from that employed by the business world. A post office built in Chicago is charged to the Treasury of the United States, as is also its maintenance, even to the janitor service. This is equally true of every post office building in this country, even though it is not occupied, in part, by courts or the custom officials. The balance sheet of a merchant, which shows no cost of buildings or the ground upon which they stand; no interest upon fixed capital; no outlay for betterments, insurance or taxes (and some one has to pay the taxes upon Government buildings); no expenses for ordinary maintenance, but simply the cost of running the machinery of the business, would hardly pass muster at that merchant's bank or among his associates.

#### Small Country Merchant Not Benefited.

The argument that the new plan would be beneficial to the small country merchant will hardly be indorsed by the merchant himself. The Postmaster-General believes that by placing a rate of \$1.32 upon an 11-lb. package from the large cities to the consumer's door, and a rate of 25 cents from a village on the particular route which delivers mail to the same consumer, will give a decided advantage to the small dealer on that route. In the first place, the consumer will not care to have the Government dictate just where he should purchase his supplies in order to get the benefit of reduced (express) charges; and in the second place, the catalogue houses will bunch their packages (just as they have been bunching their catalogues), ship them by freight to the railroad village on the route, and have them mailed by some agent at a mere nominal expense.

While the Postmaster-General has no such object in view, and does not realize that the advocates (outside the department) of parcels post feel that the indorsement by Congress of his recommendation is simply an entering wedge for their greater plan, the contention that such is the case is worthy of consideration. Those advocates are asking for a 6-cent rate on the first, and a 2-cent rate on each additional pound up to a limit of 11 lb.; in other words, a 26-cent rate on the maximum weight between any two postal points in the United States. When we reach that delectable state in the transportation of merchandise, 10 lb. of Deerfoot sausages can be shipped from Massachusetts to a remote mining camp in Montana, or an 11-lb. ham from Chicago to Central Alaska for 26 cents, notwithstanding that such shipments may each cost the Government \$1 to \$5.

#### Express Charges.

One of the objects set forth by those advocates is the regulating of express charges. The rural free delivery rates would not affect express rates, because express companies do not occupy the same territory. The reduction from 16 to 12 cents per pound would affect comparatively few shipments—none except those where the express companies receive more than 12 cents per pound for their services. In addition to these, is the further fact that the regulation of express rates is in the hands



of the Interstate Commerce Commission and should receive its attention.

#### Cannot Be Done Economically.

Finally, the opponents of the proposed new order of things in the Post Office Department, so far as it relates to cheap deliveries of merchandise to a certain small class of our people, do not believe that the United States Government is equipped for that or any other similar line of business, nor that it can do such business economically.

We have been and are blessed with first-class Postmaster-Generals, but no business in America or elsewhere could make a satisfactory showing if its controlling head were changed eight times in 12 years.

I do not believe the country is prepared to indorse any of the parcels post suggestions.

#### Building Up the Home Town.

The following letter from a representative Pennsylvania merchant condemns the spirit of parcels post, and contains an eloquent plea for the upbuilding of the home town and village:

The conducting of a catalogue house business and the advocating of parcels post is not a crime—both are within the law and both legitimate. I have no reason to doubt the sincerity of those who advocate or conduct these interests. No doubt from their standpoint they are only doing that which they believe to be eminently proper and correct, but as a native American, Pennsylvania born, and one who loves his country and is proud of his native State, the county and his home town, and as a citizen of no mean city, from my standpoint I regard them as unnecessary and a menace to the public good. I do not believe in either, and yet I strive to look above commercialism—although I own to enough selfishness to protect my own and my neighbors' business interests.

I am thoroughly in earnest and thoroughly sincere in saying and believing that all good Americans should have public spirit, patriotism and home pride enough to try and better conditions at home by investing the results of their own labors at home instead of risking it in stock gambling schemes or doubtful securities, or sending it to mail order houses in distant cities. I believe in keeping the money at home and making the home town or village grow, and in having good roads and 1-cent letter postage, instead of seeing the postal deficit increase year by year and the business of the village and town decrease, as the Government goes further into the business of carrying merchandise through the mails and becoming a common carrier, a function in the mail service certainly never contemplated by the founders and not practical from a business standpoint.

Nor do I believe it ever will be practical. I believe that it is not a proposition of public interest to be favored, either by the people at large or by our national legislators.

#### Missouri Merchants Take Action.

At a meeting last week of the Retail Merchants' Association of St. Joseph, Mo., of which Frederick Neudorff, who is prominent in the affairs of the Missouri Retail Hardware Association, is president, the following resolutions were unanimously adopted with reference to the parcels post legislation recommended by Postmaster-General Meyer:

We protest against the enactment of any parcels post legislation as outlined by the Postmaster-General in his public addresses for the following reasons:

1. It is an experimental entering wedge into a field of activity outside the functions of Government.

2. The Government not owning nor controlling the railroads, it has no facilities for the transportation of merchandise.

3. It will cause greater isolation of rural communities, with its attendant evil effect, instead of lessening same as contended by the Postmaster-General.

4. We protest, because we feel that it will result in a greater deficit in the Postal Department than now exists.

5. Because it is class legislation and therefore not a square deal, inasmuch as it establishes special privileges.

6. This nation has been made prosperous because of its diversified industries, and the ultimate result of this legislation would be toward centralization.

7. Because rates to be charged for the local parcels post are mile for mile, in excess of that charged by the Government on similar mail matter for the distances carried.

8. For the reason that first-class mail matter is bearing fully three-fourths of the expense of the Postal Department, placing an unequal and unjust tax upon

personal and business communications by mail. We ask for readjustment of postal rates and feel that a 1-cent letter postal rate would be only a slight concession to fairness. We also register our protest against a postal note system for the reason that it is intended to favor a class. We ask for no special privileges from the Government and believe none should be granted to others. We do favor the establishment of a postal savings bank system.

#### Parcels Post Condemned by the Trans-Mississippi Commercial Congress.

After an animated debate an attempt to bring before the Trans-Mississippi Commercial Congress, in annual session last week, at Muskogee, Okla., a resolution in favor of parcels post, which had been tabled in the Resolutions Committee, was defeated. The resolution had been indorsed in an elaborate address by Carter B. Keene, representing Postmaster-General Meyer, who has been active in advocating parcels post legislation. Those in opposition to the resolution pointed out that a measure of this sort would be in the direct interest of the mail order houses in the large cities to the detriment of the smaller retail business men of the country, and indirectly the farming community. The defeat of the measure out of committee was very largely due to the efforts of M. S. Darling of Oklahoma City, representing the Merchants' National Credit Men's Association, and W. T. Green of Chicago, representing the association of retail merchants west of the Mississippi River.

#### TRADE ITEMS.

A. J. WINTERS, for the past 12 years at the head of the sporting goods department of Honeyman Hardware Company, Portland, Ore., has withdrawn and formed the Archer, Combs & Winters Company, Inc., 306 Oak street, Portland. The new company will wholesale Automobile Supplies, Sporting Goods and Fishing Tackle, and will push these lines as well as Hardware specialties. Mr. Winters is now on a trip East arranging for exclusive agencies for the territory covered.

CHAS. F. BELTZ, 524 Penn avenue, Pittsburgh, Pa., has lately entered the manufacturers' agency business. Mr. Beltz is Pittsburgh manager for the Continental Fiber company and resident agent for the Luzerne Rubber Company, Elastic Tip Company and A. O. Schoonmaker, manufacturer of Mica in sheets, block or cut, Oiled Muslin and Tape, Insulating Paper, &c. Mr. Beltz's territory outside Pittsburgh covers western Pennsylvania, West Virginia and eastern Ohio.

THE KANSAS CITY ROOFING & CORRUGATING COMPANY, Kansas City, Mo., has changed its name to the Twichell Iron Company, but otherwise the business continues as heretofore, with the same officers and stockholders. This house was established in 1886 by Jerome Twichell, and is one of the oldest in the country jobbing Corrugated Steel Sheets and other metal building materials, including Steel Ceilings, Tin Plate, Building Papers, &c. The company covers the Central West and employs six traveling salesmen. Jerome Twichell is president and treasurer, and Edwin Downs, general manager.

THE November number of "The Little Blue Flag," issued by the Lowe Brothers Company, Dayton, Ohio, in the interest of its Paint and Varnish business, contains a good deal of matter relating to the annual convention of the officers and salesmen of the company, recently held. Just prior to the gathering the company had completed its 35th year in business, the firm of Lowe Brothers succeeding Stoddard & Co. in 1872.

At the annual meeting of the Kansas City (Mo.) Implement, Vehicle and Hardware Club, held on Monday evening, November 11, the following officers were elected: W. L. Day, president; J. W. Wilson, first vice-president; H. G. Moore, second vice-president; J. E. Baird, secretary; A. G. Trumbull, treasurer; Executive Committee: W. M. Ferguson, G. A. Parker, C. R. Butler, E. O. Faeth and W. F. Roth.

## REQUESTS FOR CATALOGUES, Etc.

*The trade is given an opportunity in this column to request from manufacturers price-lists, catalogues, quotations, &c., relating to general lines of goods.*

REQUESTS for catalogues, price-lists, quotations, &c., have been received from the following houses, with whom manufacturers may desire to communicate:

FROM E. R. BARKLEY HARDWARE COMPANY, which has been incorporated with a capital stock of \$15,000 in Fort Collins, Colo. The incorporators are E. R. Barkley, T. E. Schureman, E. H. Barkley and W. A. Hamnett. A retail business is carried on in Shelf and Heavy Hardware, Stoves, Tinware, Sporting and Athletic Goods.

FROM OTTO VOLKMAN, who has purchased the business of A. C. Godenschwager, Schuyler, Neb. The lines handled include Shelf and Heavy Hardware, Stoves, Tinware, Paints, Oils, Sporting and Athletic Goods. A tin shop has been added to the business.

FROM A. F. BICK, Lead, S. D., whose store has recently been damaged by fire. Mr. Bick handles Shelf and Heavy Hardware, Stoves, Tinware, Agricultural Implements, Paints, Sporting Goods.

FROM H. A. PAIN, who has succeeded Myers & Cowden, Kremlin, Okla., carrying Shelf and Heavy Hardware, Stoves, Tinware, Agricultural Implements, Paints, Oils, Sporting and Athletic Goods.

FROM ROBINSON & HADDON, Teague, Texas, who handle a general line of Hardware and kindred goods.

FROM PATON & JOHNSON, successors to Paton & Dalby, Mena, Ark., handling Shelf Hardware, Stoves, Tinware, Furniture, Crockery, Silverware, Cutlery and House Furnishings.

FROM YANTIS HARDWARE COMPANY, successor to Yantis-Kinhead Hardware Company, Fort Smith, Ark., in the retail Shelf Hardware, Stove, Tinware, Agricultural Implement, Sporting and Athletic Goods business.

FROM THE EAST POINT HARDWARE COMPANY, East Point, Ga., which has just commenced the retail business in Hardware and Stoves. Later the company expects to take up other lines.

FROM SMITH-COX HARDWARE COMPANY, Paris, Ark., which handles Shelf and Heavy Hardware, Stoves, Tinware, Agricultural Implements and Sporting Goods.

FROM HERWIG & BRIGGS, who have purchased the stock of Joseph Wozab, Humboldt, Neb., including Shelf and Heavy Hardware, Stoves, Tinware, Sporting and Athletic Goods, Furniture, &c.

FROM BINDER & HILLERY, Comanche, I. T., whose store was recently destroyed by fire. The loss was \$40,000, with insurance of \$13,400. The firm handles Shelf and Heavy Hardware, Stoves, Tinware, Agricultural Implements, Paints and Oils at wholesale and retail, and manufactures Cornices, Cresting, Ridging, Gutters, Eave Troughs, Conductor Pipe, Elbows, &c.

FROM JAMES L. FINLEY, Pesotum, Ill., whose store was destroyed by fire a short time since. The lines handled included Shelf and Heavy Hardware, Stoves, Tinware, Agricultural Implements, Paints and Sporting Goods.

FROM W. M. SEYBOLD & Co., who have succeeded Shannon & Seybold, Ashton, Idaho, carrying Shelf and Heavy Hardware, Stoves, Tinware, Agricultural Implements, Sporting and Athletic Goods and Furniture.

FROM KRAMER BROS. & Co., INC., Elizabeth City, N. C., who are now completing a large brick building, which will be used partly for glazing and for storing Sash, Doors and Blinds. In addition it is expected to put in a

line of Builders' Hardware, Hardwood Cabinet Mantels, &c., catalogues and price-lists relative to which will be valued.

## NEW YORK STATE ASSOCIATION OF HARDWARE JOBBERS.

THE annual meeting of the New York State Association of Hardware Jobbers was held at the Century Club, Syracuse, N. Y., on the 21st inst. The following officers were elected for the ensuing year: Edgar C. Neal, Buffalo, president; Robert H. Treman, Ithaca, vice-president; Joseph Born, Syracuse, secretary and treasurer, and Irving D. Booth, Elmira, and James H. Boucher, Rochester, directors. Mr. Neal, the new presi-



EDGAR C. NEAL.

dent, is vice-president of the Buffalo Wholesale Hardware Company, and a merchant of high standing and recognized ability.

## THE CONTINENTAL COMPANY'S CATALOGUES.

THE CONTINENTAL COMPANY, Detroit, Mich., has just issued its budget of Screen Goods catalogues, representing, respectively, lines of the Porter Screen Mfg. Company and the Queen Anne Screen Company, Burlington, Vt.; Owosso Mfg. Company, Owosso, Mich.; A. J. Phillips Company, Fenton, Mich.; Wabash Screen Door Company, Minneapolis, Minn., and Memphis, Tenn., and Philadelphia Screen Mfg. Company, Philadelphia, Pa. The catalogues are similar in appearance and get up, and details regarding lumber, Wire Cloth, construction, packing, terms, &c., are identical. In its introductory announcement the company makes the interesting statement that it has not only raised the quality of its output generally, but has effected a complete standardization of its lines, so that goods produced in one factory will be in every respect like those produced in each of the other factories.

## A. J. SMART MFG. COMPANY.

THE A. J. SMART MFG. COMPANY, Greenfield, Mass., which has recently begun the manufacture of Taps, has issued Catalogue No. 1, Tap Department, setting forth its line, which is a comprehensive one. The company's product includes Taps, Dies, Screw Plates for Bolt and Pipe Threading, Die Stocks and Tap Wrenches. The catalogue is well arranged, and contains a large amount of valuable information regarding Taps, in connection with the list prices, giving in many instances the diameter of Standard and Rough sizes, the total length in inches, and the number of threads to the inch in United States, V and Whitworth standards.



## WHY THE LOCAL MECHANIC SHOULD BE SUPPORTED.

**K**LINE & CO., who carry on an extensive business at Williamsport, Pa., recently had a two-page advertisement in the local dailies of a very striking and effective character. It is the custom of this house once a year, either in the spring or fall, to use extra space for what may be termed an extraordinary announcement. The one under review is headed "Kline & Co.'s Autumn and Winter Hardware Bulletin," this title appearing at the top of both pages. The announcement opens with the following general reference to the business and policy of the store:

This store stands shoulder to shoulder with your wants. At all seasons of the year you find this concern a step ahead of the others in quality and quantity, but never ahead in price. At all times the eloquence of our prices, backed up by quality, is the keynote and the secret of our success. Mother nature changes the artists in her studio as the seasons come and go, and now somber autumn is sketching gray skies and fields and woods of russet brown and gold. The falling leaves are gorgeous hued; cool mornings and evenings are rapidly lengthening into chilly days and nights—soon October's bright, clear weather will be of the past, and November's chilly blasts be whistling around the gables of our homes—but this is no almanac—this is only an "ad." in which cold types tell warm truths as to how we make our business pay us, by making it pay you, and that now is the time for you to be interested in our stock of HEATING STOVES and RANGES and our FALL and WINTER HARDWARE. The "say so" of our "ad." is the "do so" of our store. For thirty and three years we have made quality the standard—nothing too good for our customers. We have their confidence and we keep it by giving them only the best. We learned years ago that the recollection of quality remains long after the price is forgotten. Come now and share in the benefits of our contracts on Autumn and Winter Goods.

The two pages are profusely illustrated, Stoves, Ranges and Heaters being especially featured. Among other goods to which attention is thus called are Food Choppers, Sausage Stuffers, Firearms and Ammunition, Mechanics' Tools, Washers, Fencing, Builders' Hardware, Mantels, Horse Blankets, Lamps and Lanterns, Roofing, Paints, Oils and Varnishes, &c. Toys in iron, steel and wood are also given publicity in connection with a reference to preparations made for the holiday season.

This imposing advertisement, however, goes further than merely directing attention to the numerous lines of Kline & Co. Argument is advanced unobtrusively why the local merchant should be patronized rather than the immense mail order houses of the large cities. Under the head "Where to Put Your Money," the following considerations are submitted:

### Where to Put Your Money.

Shall it be with your home merchant, or shall you send to some distant city for your supply? The country is now being flooded with catalogues and advertisements of business concerns who apparently offer great inducements for cash from the consumer to buy their supplies of all kinds from them. All they ask is for you to send them the cash and they will sell you the goods, out of sight and unseen, at apparently very low prices. Suppose you stop and consider a moment whether you gain anything by buying of these distant firms, if you are inclined at all to do so.

#### If You Buy from Catalogue Houses.

You pay in advance.  
You buy the goods without seeing them.  
Your money is sent far from home.  
You cart the goods from the depot.  
You find that redress is not practicable for unsatisfactory goods.  
You have difficulty with the railroad company if goods are damaged in transportation.  
You pay freight or express charges extra.  
You pay a price that is only apparently low.

#### If You Buy of Your Local Dealer.

You may receive credit.  
You make actual comparisons and select from a variety of styles and sizes.  
Your money stays at home to help build up your own community.  
You can have the goods delivered to your home.  
The articles are easily exchanged if not satisfactory.  
You will receive them in good condition.  
You have no freight or express charges to pay.  
You get best quality goods at right prices.

If you send your money away from home does it not occur to you that you are not helping to build up your own community, or make it pay your home storekeeper to stay in business where you live, and where he helps you to pay taxes, but that you are building up some concern in a distant city that has no interest in you or your property.

Remember that your home merchant accommodates you often by delivering your goods at your door, by extending credit to you, when cash is not at hand; he helps to support the schools, churches and other public institutions, including helpless and unfortunate ones in your locality; he is your neighbor, working shoulder to shoulder with you, and helps to increase the value of your own farm or real estate by making your community more active and vigorous.

The tendency of the past few years has been for people to congregate in large cities, and the more the farmer helps to centralize the distribution of goods in large cities the more he cuts down the value of his farm and the farm products. It is for the interest of the farmer to have a number of villages, towns and small cities throughout the country, rather than a few large cities, for certainly the smaller places give him a market for his farm produce, fruits, poultry and small products that would not pay him to send to the distant cities. By building up his own community and helping to make it progressive, working shoulder to shoulder with his neighbor, the merchants and local business men, each helping the other, conduces to the best development of the country.

### What About Your Home City?

Under the head "What About Your Home City?" the following queries are given a place:

It's good enough to live in, isn't it?  
It's good enough to make your money in, isn't it?  
It's good enough to spend your money in?  
Do you ask your merchant to trust you for a year or two, or three or more, and send the cash to the mail order house?  
Do you see the goods, or buy on guess?  
Would you buy of your home merchant so?  
"Make Williamsport and every Lycoming County town and village flourish," your Slogan.  
Buy Goods of Home Merchants.

An extract also appears from a familiar address of Governor Folk, in which the Missouri executive condemned the "mail order citizen," and declared that it was better to have a thousand towns than one large city. Good roads and "The Large City Craze" are also discussed in other paragraphs.

This advertising announcement obtained a circulation of 27,000 in Williamsport and surrounding territory, and is regarded by the house as having had an excellent effect and fully justifying the large expenditure involved.

## MISCELLANEOUS NOTES.

### Colonial Metal Ceilings.

The James H. Watson Company, Bradley, Ill., is just placing on the market new designs of Colonial ceilings, including a number of Louis XIV designs; also wainscoting. Attention is directed to the fact that the material throughout is stamped boldly, but still retains a rich plastic effect.

### Eyelet Plier Display Cabinet.

The Hawkes-Jackson Company, 82 Duane street, New York, manufacturer of "Solidhed" specialties, including thumb tacks, paper fasteners, &c., has just brought out an additional cabinet or display case, from which to make sales, containing eyelets and eyelet pliers, as here illustrated. The eyelets may be used for fastening together papers, cards, fabrics and similar materials for convenient handling. Each case contains 16 turned wood boxes, having 250 eyelets each, eight on a side, with 12 steel polished and nicked eyelet pliers for inserting and setting the eyelets. The combination eyelet punch and set are put up individually in a neat slide pasteboard box, each  $4\frac{1}{2} \times 4 \times \frac{7}{8}$  in., 10 of which are in the center of

display case and two mounted as samples, front and back, outside. The case of substantial cardboard is covered with a bright red paper, serving not only as a receptacle for reserve stock, but attractive enough to arrest the attention of customers, to many of whom such a conven-

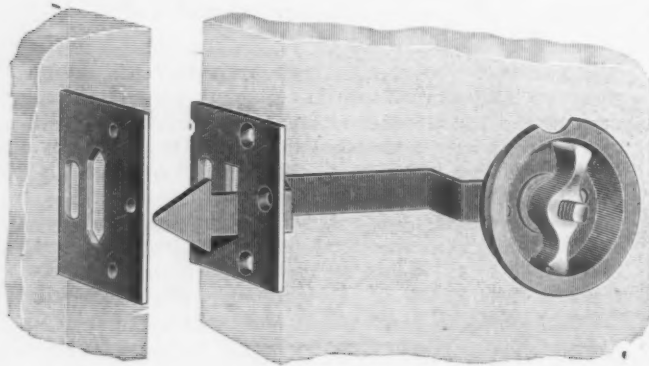


*Eyelet Plier Display Case, Uncovered.*

ience may be unknown. Where trial orders of a single case are ordered the cabinet will be packed in another pasteboard box and wrapped for shipment.

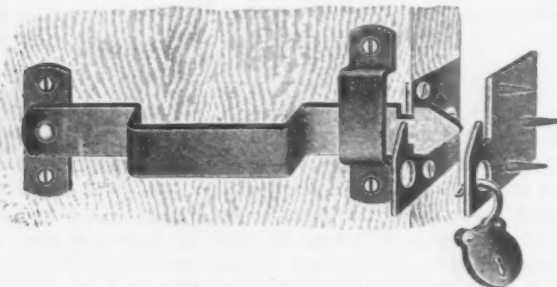
#### The Richards Sliding Door and Gate Latches.

The accompanying illustrations represent latches offered by the Richards Mfg. Company, Aurora, Ill. The latch shown in Fig. 1 is adjustable and reversible, and is designed for sliding doors on barns, mills, warehouses,



*Fig. 1.—Richards Ideal Steel Sliding Door Latch.*

&c. The adjustment provides for doors from  $1\frac{3}{4}$  to  $2\frac{5}{8}$  in. thick. It is reversible for right or left hand doors, arranged for locking with padlock, and is finished in black enamel, packed 1 dozen in a box. The latch shown in Fig. 2 is 11 in. long, 1 in. wide and  $\frac{1}{4}$  in. thick, and is especially designed for sliding farm gates, but can be

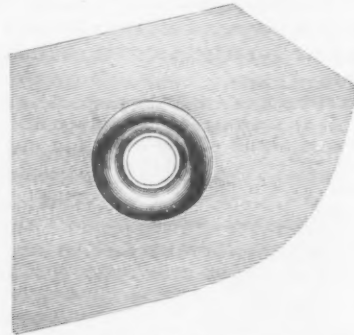


*Fig. 2.—Richards Teddy Steel Gate Latch.*

used on any door or gate, either sliding or swinging, where it is necessary to operate the latch from the outside only. The latches are finished in black enamel and packed half dozen in a box complete, with screws.

#### Dandy Pot Scraper.

The Arcade Mfg. Company, Freeport, Ill., is offering a useful kitchen utensil in the form of a steel kettle scraper, named the "Dandy." As shown in the illustration, the scraper is provided with straight and curved edges, and angular corners, which facilitates reaching the irregular surfaces and corners of utensils. It is made of a single piece of cold rolled steel, with an opening in

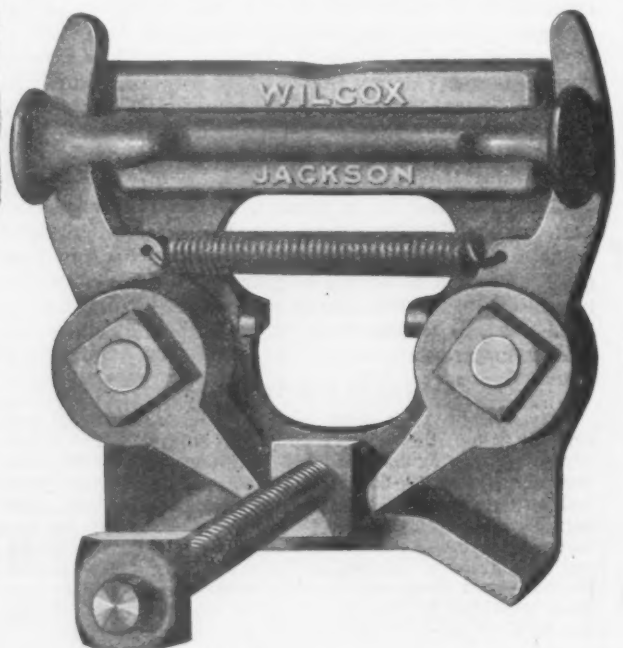


*Dandy Pot Scraper.*

the center for the purpose of hanging the scraper in a convenient place, at the same time affording the operator a firmer grip. It is easily cleaned and is said to be both effective and inexpensive.

#### Wilcox-Jackson Gate Latch.

The Wilcox Mfg. Company, Aurora, Ill., is bringing out a new line of metal specialties, which includes the automatic gate latch, herewith illustrated. In construction and operation the latch is simple and is said to be durable and effective. The illustration shows the face of the latch, which is bolted to the post. The catch bolt, for attachment to the gate frame, is shown at the bottom of the latch in the position it occupies when the gate is closed. The holding dogs on either side are held by a



*No. 352 Wilcox-Jackson Gate Latch.*

coil spring and the bolt is released by pressure on the push pin at the top. With the bolt resting firmly on a projecting shelf, the gate is prevented from sagging. It will be seen that the gate opens with equal facility in either direction. This latch is the invention of Clarence L. Colby and is manufactured under patents controlled by the Wilcox Mfg. Company. The latches are finished in japan and are packed in dozen or half dozen boxes, complete, with  $\frac{1}{2}$  x 4 in. lag bolts. The weight per dozen is 50 lb.



### The "W & B" Ball Bearing Lawn Mower.

The ball bearing lawn mower, herewith illustrated, is made by the Whitman & Barnes Mfg. Company, Chicago. Fig. 1 shows the complete machine, which is made on

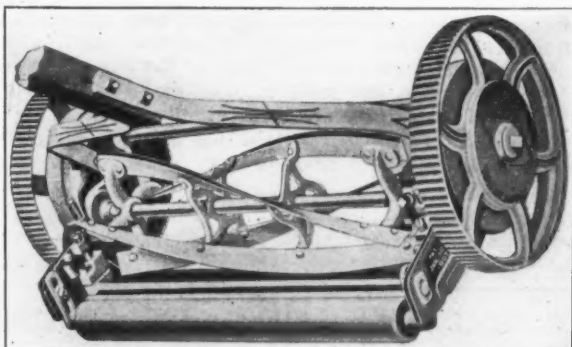


Fig. 1.—The "W. & B." Ball Bearing Lawn Mower.

the same general lines as other ball bearing mowers, with the exception that the adjustment of the ball bearings is made automatically by means of a coil spring placed

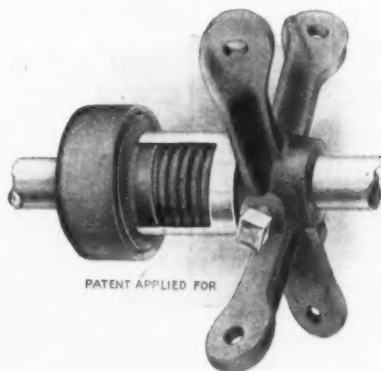


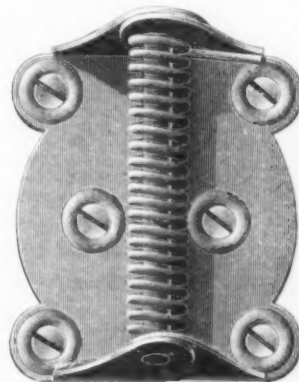
Fig. 2.—Reel Adjustment Collar.

between the end spider and the ball bearing cone. A continuous pressure is in this manner exerted against the cone, which holds it and the balls in adjustment without any attention whatever from the operator. The sectional

view shown in Fig. 2 illustrates the method of adjusting the reel to the cutter center bar. This adjustment is conveniently made by turning the adjustment collar and tightening the center screw. The adjustment mechanism is tightly incased and protected from dirt, and the balls, cups and cones are of high quality steel, carefully ground and polished, and are dustproof. The advantage in the automatic adjustment, other than the fact that no attention need be given to the bearing of the machine, is that a lawn mower with reel bearings in adjustment at all times insures correct contact between the reel blades and the cutter bar blades, this being an essential for perfect cutting. The mower is attractively finished and of very light draft, and is made in 14, 16, 18 and 20 in. sizes, with wheels 10 in. in diameter; reels, 5 1/2 in. in diameter, with four blades.

### The 888 Screen Door Hinge.

The Shelby Spring Hinge Company, Shelby, Ohio, is placing on the market the nonholdback screen door



No. 888 Screen Door Hinge.

hinge, shown herewith. The body is made of wrought steel, with a heavy coiled wire spring. The hinge is al- luded to as being neat, attractive and durable.

THE KNOXVILLE IMPLEMENT & MACHINERY COMPANY, Knoxville, Tenn., has been incorporated with a capital stock of \$10,000, the incorporators being B. N. Phillips, A. J. Potts, S. M. Felker, J. P. Hill and H. J. Rankins.

## PAINTS, OILS AND COLORS

Animal, Fish and Vegetable Oils—	
	per gal.
Linseed, Western, raw.....	45 @ 46
City, Boiled.....	48 @ 49
City, Raw.....	47 @ 48
Raw, Calcutta, in bbls.....	69 @ ..
Lard, Extra Prime, Winter.....	74 @ 77
Extra No. 1.....	63 @ 66
No. 1.....	49 @ 52
Cotton-seed, Crude, f.o.b. mills.....	21 1/4 @ 23
Summer Yellow, Prime.....	35 @ 36
Summer White.....	37 @ 38
Yellow Winter.....	40 @ 41
Sperm, Crude.....	50 @ 60
Natural Winter.....	71 @ 74
Bleached Winter.....	74 @ 76
Bleached Winter, Extra.....	80 @ ..
Tallow, Prime.....	59 @ 60
Whale, Crude.....	35 @ 36
Natural Winter.....	46 @ 48
Bleached Winter.....	49 @ 51
Extra Bleached Winter.....	52 @ 54
Menhaden, Brown, Strained.....	41 @ 42
Light Strained.....	41 @ 42
Northern.....	40 @ ..
Southern.....	40 @ ..
Cocconut, Ceylon.....	74 @ 80
Cochin.....	74 @ 80
Cod, Domestic, Prime.....	42 @ 44
Newfoundland.....	44 @ 46
Red, Elaine.....	46 @ 49
Saponified.....	64 @ 70
Olive, Yellow.....	75 @ 80
Neatsfoot, Prime.....	35 @ 58
Palm, Lagos.....	64 @ 66
Mineral Oils—	
Black, 29 gravity, 25@30 cold test.....	13 @ 13 1/2
29 gravity, 15 cold test.....	13 1/2 @ 14
Summer.....	12 1/2 @ 13
Cylinder, light filtered.....	20 1/2 @ 21
Dark, filtered.....	18 @ 19
Paraffine, 903-907 sp. gravity.....	14 1/2 @ 15
903 sp. gravity.....	13 1/2 @ 14
883 sp. gravity.....	11 @ 11 1/2
Red.....	13 1/2 @ 14

Miscellaneous—	
Barytes:	
White, Foreign.....	per ton \$18.50 @ 20.50
Amer. floated.....	per ton 19.00 @ 20.00
Off color.....	per ton 13.00 @ 16.50
Chalk, in bulk.....	per ton 3.00 @ 3.25
In bbls.....	per 100 lb. 3 @ 3.35
China Clay, Imported.....	per ton 11.00 @ 17.50
Cobalt, Oxide.....	per 100 lb. 2.50 @ 2.60
Whiting, Commercial.....	per 100 lb. .43 @ .52
Gilders.....	per 100 lb. .55 @ .65
Ex. Gilders.....	per 100 lb. .60 @ .65
Putty, Commercial—	
In bladders.....	\$1.70 @ 1.85
In bbls. or tubs.....	1.20 @ 1.45
In 1 lb. to 5 lb. cans.....	2.65 @ 2.95
In 12 1/2 to 50 lb. cans.....	1.50 @ 1.90
Spirits Turpentine—	
In Oil bbls.....	47 1/2 @ 48
In machine bbls.....	48 @ 48 1/2
Glue—	
Cabinet.....	12 @ 15
Common Bone.....	7 1/2 @ 9
Extra White.....	18 @ 24
Foot Stock, White.....	12 @ 14
Foot Stock, Brown.....	9 @ 11
German Hide.....	12 @ 18
French.....	10 @ 10
Irish.....	13 @ 16
Low Grade.....	10 @ 12
Medium White.....	14 @ 17
Gum Shellac—	
Bleached, Commercial.....	30 @ 31
Bone Dry.....	38 @ 40
Button.....	40 @ 50
Diamond.....	51 @ 52
Fine Orange.....	31 @ 35
A. C. Garnet.....	45 @ 46
G. A. L.....	26 @ 28
Kala Buttor.....	20 @ 22
D. O.....	54 @ 56
Octagon B.....	51 @ 52
T. N. O.....	38 @ 40
V. S. O.....	33 @ 35
Colors in Oil—	
Black, Lamplack.....	12 @ 14
Blue, Chinese.....	36 @ 46

Blue, Prussian.....	32 @ 36
Blue, Ultramarine.....	13 @ 16
Brown, Vandyke.....	11 @ 14
Green, Chrome.....	12 @ 16
Green, Paris.....	21 @ 24
Sienna, Raw.....	12 @ 15
Sienna, Burnt.....	12 @ 15
Umber, Raw.....	11 @ 14
Umber, Burnt.....	11 @ 14
White Lead, Zinc, &c.—	
Lead, English white, in Oil.....	10 1/2 @ 10 3/4
Lead, American White:	
Lots of 500 lb. or over, in Oil.....	@ 7
Lots less than 500 lb., in Oil.....	@ 7 1/2
Lead, White, in oil, 25 lb. tin	
pails, add to keg price.....	@ 1
Lead, White, in oil, 12 1/2 lb. tin	
pails, add to keg price.....	@ 1
Lead, White, in oil, 1 to 5 lb.	
assorted tins, add to keg price.....	@ 1 1/2
Lead, American, Terms: For lots 12	
tons and over 1/4 % rebate; and 2% for	
cash if paid in 15 days from date of	
invoice; for lots of 500 lbs. and over	
2% for cash if paid in 15 days from	
date of invoice, for lots of less than	
500 lbs. net.....	5 1/2 @ 5 1/4
Zinc, American, dry.....	5 1/2 @ 5 1/4
Zinc, French:	
Antwerp, Red Seal, dry.....	8 1/2
Antwerp, Green Seal, dry.....	10 1/2
Paris, Red Seal, dry.....	9 1/2
Paris, Green Seal, dry.....	11
Zinc, V. M. French, in Poppy Oil:	
Green Seal:	
Lots of 1 ton and over.....	13 1/4 @ 13 1/2
Lots of less than 1 ton.....	13 1/2 @ 13 3/4
Zinc, V. M. French, in Poppy Oil:	
Red Seal:	
Lots of 1 ton and over.....	11 1/4 @ 11 1/2
Lots of less than 1 ton.....	12 1/4 @ 12 1/2
Discounts.—French Zinc.—Discounts	
to buyers of 10 bbl. lots of one or mixed	
grades, 1% ; 25 bbls., 2% ; 50 bbls., 4%.	
Dry Colors—	
Black, Carbon.....	6 1/2 @ 10
Black Drop, American.....	3 1/2 @ 8
Black Drop, English.....	5 @ 15

Black, Ivory.....	18 @ 20
Lamp, commercial.....	4 @ 6
Blue, Celestial.....	4 @ 6
Blue, Chinese.....	30 @ 33
Blue, Prussian.....	28 @ 32
Blue, Ultramarine.....	3 1/4 @ 15
Brown, Spanish.....	1 1/2 @ 1
Carmine, No. 40.....	\$3.10 @ 3.25
Green, Chrome, ordinary.....	3 1/4 @ 5
Green, Chrome, pure.....	17 @ 25
Lead, Red, bbls., 1/2 bbls., kegs.....	@ 7 1/4
Litharge, bbls., 1/2 bbls., kegs.....	@ 7 1/4
Ocher, American.....	per ton \$8.50 @ 16.00
American Golden.....	2 1/4 @ 3 1/4
French.....	1 1/4 @ 2
Foreign Golden.....	3 @ 4
Orange Mineral, English.....	10 @ 12
French.....	11 1/4 @ 12
German.....	10 @ 12
American.....	8 1/2 @ 9
Red, Indian, English.....	4 1/2 @ 6
American.....	3 @ 3 1/4
Red, Turkey, English.....	4 @ 10
Red, Tuscan, English.....	7 @ 10
Red, Venetian, Amer.....	per 100 lb. \$0.50 @ 1.25
English.....	per 100 lb. \$1.15 @ 1.60
Sienna, Italian, Burnt and	
Powdered.....	3 @ 9
Italian, Raw, Powdered.....	3 @ 7
American, Raw.....	14 @ 2
American Burnt and Pow'd.....	1 1/4 @ 2
Talc, French.....	per ton \$18.00 @ 25.00
American.....	per ton 15.00 @ 25.00
Terra Alba, French.....	per 100 lb. .90 @ 1.00
English.....	per 100 lb. .80 @ 1.00
American.....	per 100 lb. .75 @ .80
American.....	per 100 lb. .60 @ .65
Umber, T'key, Bnt. & Pow'd.....	2 @ 3 1/4
Turkey, Raw and Powdered.....	2 1/4 @ 3 1/4
Burnt, American.....	1 1/4 @ 2
Raw, American.....	1 1/4 @ 2
Yellow Chrome, Pure.....	12 @ 14
Vermilion, American Lead.....	7 @ 25
Quicksilver, bulk.....	.65 @ ..
Quicksilver, bags.....	.65 @ ..
English, Imported.....	.65 @ 70
Chinese.....	.90 @ 1.00

# Current Hardware Prices.

**General Goods.**—In the following quotations General Goods—that is, those which are made by more than one manufacturer—are printed in *Italics*, and the prices named, unless otherwise stated, represent those current in the market as obtainable by the fair retail Hardware trade, whether from manufacturers or jobbers. Very small orders and broken packages often command higher prices, while lower prices are frequently given to larger buyers.

**Special Goods.**—Quotations printed in the ordinary type (Roman) relate to goods of particular manufacturers, who are responsible for their correctness. They usually represent the prices to the small trade, lower prices being obtainable by the fair retail trade, from manufacturers or jobbers.

**Range of Prices.**—A range of prices is indicated by means of the symbol @. Thus 33½ @ 33½ & 10% signifies

that the price of the goods in question ranges from 33½ per cent. discount to 33½ and 10 per cent. discount.

**Names of Manufacturers.**—For the names and addresses of manufacturers see the advertising columns and also THE IRON AGE DIRECTORY, issued May, 1907, which gives a classified list of the products of our advertisers and thus serves as a DIRECTORY of the Iron, Hardware and Machinery trades.

**Standard Lists.**—"The Iron Age Standard Hardware Lists" contains the list prices of many leading goods.

**Additions and Corrections.**—The trade are requested to suggest any improvements with a view to rendering these quotations as correct and as useful as possible to Retail Hardware Merchants.

## Adjusters, Blind—

Columbian and Domestic.....33½%  
Nott's.....10%  
Zimmerman's—See Fasteners, Blind.

## Window Stop—

Ives' Patent.....25%  
Tappin's Perfection.....35%

## Ammunition—See Caps, Cartridges, Shells, &c.

## Anti-Rattlers—

Fernald Mfg. Co. Burton Anti-Rattlers, ½ doz. pairs, Nos. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000.

## Anvils—American—

Eagle Anvils.....@ 81%  
Hay-Budden, Wrought.....@ 9%  
Trenton.....@ 9%

## Imported—

Peter Wright & Sons, ½ lb. 81 to 319 lb. 11¢; 350 to 600 lb. 11½¢.

## Anvil, Vise and Drill—

Millers Falls Co., \$18.00.....15&10%

## Apple Parers—See Parers, Apple, &c.

## Aprons, Blacksmiths'—

Livingston Nail Co.....33½%

## Augers and Bits—

Com. Double Spur.....75@80%  
Jennings' Patn., Bright, 65¢10¢70%  
Black Lip or Bowed.....65@66¢5%  
Boring Mach. Augers.....70%  
Car Bits, 12-in. twist.....40¢10%  
Ford's Auger and Car Bits.....40&5%  
Ft. Washington Auger Co., Concord's.....35%  
Forstner Pat. Auger Bits.....35%  
C. E. Jennings & Co.:  
No. 10 ext. lip, R. Jennings' list.....25&7½%  
No. 30, R. Jennings' list.....50%  
Russell Jennings'.....25&10&2½%  
L'Hommedieu Car Bits.....15%  
Mayhew's Countersink Bits.....15%  
Pugh's Black.....40%  
Pugh's Jennings' Pattern.....35%  
Snell's Auger Bits.....60%  
Snell's Bit Hangers Bits.....60%  
Snell's Car Bits, 12-in. twist.....60%  
Snell's King Auger Bits.....50%  
Wright's Jennings' Bits.....50%

## Bit Stock Drills—

See Drills, Twist.

## Expansive Bits—

Clark's Pattern, No. 1, ½ doz. 12¢;  
No. 2, 13¢.....60&10%  
Ford's, Clark's Pattern.....60&5%  
C. E. Jennings & Co., Steer's Pat. 25¢  
Lavigne Pat., small size, \$18.00; large size, \$26.00.....60&10%  
Swan's.....60%

## Gimlet Bits—

Common Dble. Cut.....\$3.00@3.25

German Pattern, Nos. 1 to 10, \$4.75; 11 to 15, \$5.75

## Hollow Augers—

Bonney Pat., per doz.....\$6.50@7.00  
Ames.....25&10%  
Universal.....20%

## Ship Augers and Bits—

Ship Augers.....40¢10%  
Ford's.....33&5%  
C. E. Jennings & Co.:  
L'Hommedieu's.....6%  
Watrous'.....33½&7½%  
Snell's.....40%

## Awl Hafts—See Handles, Mechanics' Tool.

## Awls—

Brad Awls:  
Handled.....gro. \$2.75@3.00  
Unhanded, Shlided.....gro. \$3.00@3.25  
Unhanded, Patent.....gro. \$3.00@3.25

## Peg Awls—

Unhanded, Patent.....gro. \$1.25@1.50  
Unhanded, Shlided.....gro. \$1.50@1.75  
Scratch Awls:  
Handled, Com.....gro. \$1.50@1.75  
Handled, Socket.....gro. \$1.50@1.75

## Awl and Tool Sets—See Sets, Awl and Tool.

## Axes—

Single Bit, base weights: Per doz.  
First Quality.....\$1.75@5.00  
Second Quality.....\$1.25@4.50

## Double Bit, base weights:

First Quality.....\$7.00@7.50

Second Quality.....\$6.50@6.75

## Axle Grease—

See Grease, Axle

## Axles—

Iron or Steel

Concord, Loose Collar.....4½@5¢

Concord, Solid Collar.....4½@5¼¢

No. 1 Com., Loose.....3½@4¼¢

No. 1½ Com., New Style.....4½@5¢

No. 2 Solid Collar.....4½@5¢

Half Patent:

Nos. 7, 8, 11 and 12.....65@65¢10%

Nos. 13 to 14.....65@65¢10%

Nos. 15 to 18.....70@70¢10%

Nos. 19 to 22.....70@70¢10%

## Boxes, Axle—

Common and Concord, not turned lb., 5¢6¢

Common and Concord, turned lb., 6¢7¢

Half Patent.....lb., 9½¢10¢

## Bait—

Fishing—

Hendryx:

A Bait.....20%

B Bait.....20%

Competitor Bait.....20&5%

## Balances—

Sash—

Caldwell new list.....50%

Pullman.....50&10&60%

## Spring—

Spring Balances.....50&10@60%

Chatillon's:

Light Spg. Balances.....50@50&10%

Straight Balances.....40@40&10%

Circular Balances.....50&10%

Large Dial.....30%

## Barb Wire—See Wire, Barb.

## Bars—

Crow—

Steel Crowbars, 10 to 40 lb. per lb., @ 2½¢3½¢

## Towel—

No. 10 Ideal, Nickel Plate.....\$1.20

## Beams, Scale—

Scale Beams.....40%

Chatillon's No. 1.....30%

Chatillon's No. 2.....40%

## Beaters, Carpet—

Holt-Lyon Co.:

No. 12 Wire Coppered ½ doz. \$0.80;

Tinned.....\$0.85

No. 11 Wire Coppered ½ doz. \$1.15;

Tinned.....\$1.20

No. 10 Wire Tinned.....½ doz. \$1.50

## Beaters, Egg—

Holt-Lyon Co.:

Holt, per doz., No. 5, Jap'd, \$0.80;

No. 4, Jap'd, \$1.15; No. 6, Jap'd, \$1.85;

No. 6, Jap'd, \$1.65;

Lyon, Jap'd, per doz., No. 2, \$1.35.

Tappin Mfg. Co.:

Improved Dover, per gro., No. 60, \$6.00; No. 75, \$6.50; No. 100, \$7.00;

No. 102, Tin'd, \$8.50; No. 150, Hotel, \$15.00; No. 152, Hotel Tin'd, \$17.00; No. 200, Tumbler, \$8.50; No. 202, Tumbler Tin'd, \$9.50; No. 300, Mammoth, per doz., \$25.00.

Turner & Seymour Mfg. Co.:

T. & S. Dover.....\$6.50

## Bellocks—

Blacksmith, Standard List.....

Split Leather.....60&10@65%

Grain Leather.....50@50&10%

## Hand—

Inch.....6 7 8 9 10

Doz.....\$5.00 5.50 6.00 6.50 7.50

## Molders—

Inch.....10 12 14 16

Doz.....\$7.50 9.00 12.00 15.00

## Bells—

Cow—

Ordinary Goods.....75&5@75&10&5%

High grade.....70&10@75%

Jersey.....75&10%

Texas Star.....50%

## Door—

Home, B. & E. Mfg. Co.'s.....35&10%

## Hand—



**Cages, Bird—**

Atlantic Brass: Series 3000, 5000,  
100, net list; 1200, 15%; 200, 300,  
500  
Hendryx Bronze; Series 700, 800, 30%  
Hendryx Enamelled.....35%

**Calipers—See Compasses—****Calks, Toe and Heel—**

Blunt, 1 prong, per lb., 4½¢ @ 4½¢  
Sharp, 1 prong, per lb., 4½¢ @ 5½¢  
Burke's, Blunt, 4½¢; Sharp, 4½¢ @ 5½¢  
Lautier, Blunt, 4½¢; Sharp, 4½¢ @ 5½¢  
Perkins', Blunt, ½ lb., 3.65¢; Sharp,  
4.15¢

**Can Openers—**

See Openers, Can.

**Caps, Percussion—**

Eley's E. B.....52¢ @ 55¢  
G. D.....per M 34¢ @ 35¢  
F. L.....per M 40¢ @ 42¢  
G. E.....per M 48¢ @ 50¢  
Musket.....per M 62¢ @ 63¢

**Primers—**

Berdan Primers, \$2 per M.....20¢ @ 25¢  
Primer Shells and Bullets.....15¢ @ 10¢  
All other primers per M.....\$1.52 @ 1.60

**Carpet Stretchers—**

See Stretchers, Carpet.

**Cartridges—**

Blank Cartridges:

32 C. F., \$5.50.....10¢ @ 5¢  
38 C. F., \$7.00.....10¢ @ 5¢  
32 cal. Rim, \$1.50.....10¢ @ 5¢  
32 cal. Rim, \$2.75.....10¢ @ 5¢  
B. B. Caps, Con. Ball, Sg'd.....\$1.90  
B. B. Caps, Round Ball.....\$1.40  
Central Fire.....25¢  
Target and Sporting Rifle.....15¢ @ 5¢  
Primed Shells and Bullets.....15¢ @ 10¢  
Rim Fire, Sporting.....50¢  
Rim Fire, Military.....15¢ @ 5¢

**Castors—**

Bed.....65¢ @ 10¢  
Plate.....60¢ @ 5¢  
Philadelphia.....70¢ @ 10¢  
Acme, Ball Bearing.....35¢  
Gem (Roller Bearing).....70¢ @ 10¢ @ 10¢  
Steel Gem.....40¢  
Standard Ball Bearing.....40¢  
Yale (Double Wheel) low list.....40¢ @ 10¢

**Cattle Leaders—**

See Leaders, Cattle.

**Chain, Proof Coil—**

American Coil, Straight Link:  
3-16 ¼ 5-16 ¾ 7-16 ¾ 9-16  
\$8.77 6.17 5.02 4.57 4.37 4.27 4.22  
¾ ¾ ¾ ¾ 1 1 1 1 1 1 1 1 1 1 1 1  
¾ ¾ ¾ ¾ ¾ ¾ ¾ ¾ ¾ ¾ ¾ ¾ ¾ ¾ ¾ ¾  
\$4.17 4.07 4.02 4.12  
In case lots, deduct 25¢  
German Coil:  
6-0 to 1.....70¢ @ 70¢ @ 10¢  
2 and 3.....60¢ @ 10¢ @ 60¢ @ 10¢ @ 5¢  
4, 5 and 6.....50¢ @ 10¢ @ 50¢ @ 10¢ @ 5¢

**Halter—**

Halter Chains.....60¢ @ 60¢ @ 5¢  
German Pattern Halter Chains,  
list July 24, '07.....60¢ @ 10¢ @ 5¢  
Covert Mfg. Co.  
Halter.....35¢ @ 5¢

**Cow Ties—**

See Halters and Ties.

**Trace, Wagon, &c.—**

Traces, Western Standard: 100 pr.  
6½-6-3, Straight, with ring.....\$28.00  
6½-6-2, Straight, with ring.....\$29.00  
6½-8-2, Straight, with ring.....\$32.00  
6½-10-2, Straight, with ring.....\$37.00  
NOTE—Add 2¢ per pair for Hooks.  
Twist Traces: add per pair for Nos. 2  
and 3, 2¢; No. 1, 3¢; No. 4, 4¢ to price of  
Straight Link.

Eastern Standard Traces, Wag-  
on Chain, &c.....60¢ @ 10¢ @ 60¢ @ 10¢ @ 5¢

**Miscellaneous—**

Jack Chain, list July 10, '03:  
Iron.....60¢ @ 10¢  
Brass.....60¢  
Safety and Plumbers' Chain.....60¢ @ 10¢  
Gal. Pump Chain.....1b. 4½¢ @ 4½¢  
Covert Mfg. Co.:  
Breast, Halter, Heel, Rein, Stal-  
lion.....40¢  
Oneida Community:  
American Halter, Dog and Kennel  
Chains.....35¢ @ 2½¢ @ 40¢  
Niagara Dog Leads and Kennel  
Chains.....45¢ @ 50¢ @ 5¢  
Wire Goods Co.:  
Dog Chain.....70¢  
Universal Dbl.-Jointed Chain.....50¢

**Chain and Ribbon, Sash—**

Oneida Community:  
Steel Chain.....60¢  
Pullman:  
Bronze Chain, 60%; Steel Chain,  
60¢ @ 10¢  
Sash Chain Attachments, per set. 8¢  
Aluminum Sash Ribbon, per 100  
ft.....\$1.25 @ \$3.00  
Sash Ribbon Attachments, per set. 8¢

**Chalk—(From Jobbers.)**

Carpenters' Blue.....gro., 50¢ @ 55¢  
Carpenters' Red.....gro., 45¢ @ 50¢  
Carpenters' White.....gro., 40¢ @ 45¢

**Checks, Door—**

Bardsley's.....45¢  
Pullman, per gro.....\$4.00  
Russwin.....33½¢

**Chests, Tool—**

American Tool Chest Co.:  
Boys' Chests, with Tools.....50¢  
Youths' Chests, with Tools.....25¢  
Gentlemen's Chests, with Tools.....25¢  
Farmers', Carpenters', etc., Chests,  
with Tools.....20¢  
Machinists' and Pipe Fitters'  
Chests, Empty.....45¢  
Tool Cabinets.....45¢  
C. E. Jennings & Co.'s Machinists'  
Tool Chests.....7½¢

**Chisels—**

Socket Framing and Firmer  
Standard List.....75¢ @ 10¢  
Huck Bros.....30¢  
C. E. Jennings & Co.:  
Socket Firmer No. 10.....25¢ @ 7½¢  
Socket Framing No. 15.....25¢ @ 7½¢  
Swan's.....60¢ @ 70¢  
L. & J. White Co.....30¢ @ 30¢ @ 5¢

**Tanged—**

Tanged Firmers.....30¢ @ 35¢  
Huck Bros.....30¢  
C. E. Jennings & Co. Nos. 191, 181.....25¢  
L. & J. White Co.....30¢ @ 30¢ @ 5¢

**Cold—**

Cold Chisels, good quality.....13¢ @ 15¢  
Cold Chisels fair quality.....11¢ @ 12¢  
Cold Chisels, ordinary.....9¢ @ 10¢

**Chucks—**

Almond Drill Chucks.....35¢  
Almond Turret Six-Tool Chuck.....40¢  
Beach Pat., each \$8.00.....35¢ @ 5¢  
Empire.....25¢  
Blacksmiths'.....25¢  
Jacobs' Drill Chucks.....35¢  
Pratt's Positive Drive.....25¢  
Skinner Patent Chucks.....35¢  
Independent Lathe Chucks.....35¢  
Combination, Reversible Jaws.....35¢  
Drill Chucks, New Model, 25%  
Standard, 45%; Skinner Pat.,  
25%; Positive Drive.....40¢  
Planer Chucks.....40¢  
Face Plate Jaws.....35¢  
Standard Tool Co.....45¢  
Improved Drill Chuck.....45¢  
Union Mfg. Co.:  
Combination, Nos. 1, 2, 3, 4, 5, 6,  
7, 8 and 17, 40%; No. 21.....35¢  
Scroll Combination, Nos. 83 and  
84.....35¢  
Gunscoil, Nos. 33, 34 and 35.....35¢  
Independent Iron, Nos. 18 and 318, 35¢  
Independent Steel, No. 61.....25¢  
Union Drill, Nos. 000, 00, 100, 101,  
102, 103, 104.....35¢  
Union Car Drill.....25¢  
Universal, 11, 12, 16, 17, 13, 14, 15.....40¢  
Universal, No. 42.....35¢  
Iron Face Plate Jaws, Nos. 28, 30,  
48 and 50.....35¢  
Steel Face Plate Jaws, Nos. 70 and  
72.....30¢  
Westcott Patent Chucks:  
Lathe Chucks.....50¢  
Little Giant Auxiliary Drill.....50¢  
Little Giant Double Grip Drill.....50¢  
Little Giant Drill, Improved.....50¢  
Oneida Drill.....50¢  
Scroll Combination Lathe.....50¢

**Clamps—**

Adjustable, Hammers.....20¢ @ 20¢ @ 5¢  
Carriage Makers, P. S. & W.  
Co.....50¢ @ 10¢  
Resly, Parallel.....33½¢ @ 5¢  
Myers' Hay Rack.....45¢  
Lineman's Swedish Neverturn.....65¢  
Wood Workers, Hammers.....40¢ @ 10¢  
Saw Clamps, see Vises, Saw Filers.

**Cleaners, Drain—**

Iwan's Champion, Adjustable.....50¢  
Iwan's Champion, Stationary.....40¢

**Sidewalk—**

Star Socket, All Steel, ½ doz. \$4.25 net  
Star Shank, All Steel, ½ doz. \$4.25 net  
W. & C. Shank, All Steel, ½ doz.,  
7½ in., \$3.00; 8 in., \$3.25.

**Cleavers, Butchers'—**

Foster Bros.....30¢  
Fayette R. Plumb.....30¢  
L. & J. White Co.....30¢

**Clippers, Horse and Sheep—**

Chicago Flexible Shaft Company:  
1902 Chicago Horse, each.....\$10.75  
20th Century Horse, each.....\$5.00  
Lightning Belt Horse, each.....\$15.00  
Chicago Belt Horse, each.....\$20.00  
Stewart's Enclosed Gear  
Horse, each.....\$8.75  
Stewart's Patent Sheep Shear-  
ing Machine, each.....\$12.75  
Stewart Enclosed Gear Shear-  
ing Machine, No. 8, each.....\$9.75

**Clips, Axle—**

Regular Styles, list July 1, '05,  
80¢ @ 80¢ @ 10¢

**Cloth and Netting, Wire**

—See Wire, &c.

**Cocks, Brass—**

Hardware Hat:  
Plain Bibbs, Globe, Kerosene,  
Racking, Liquor, Bottling,  
&c.....70¢ @ 7¢  
Compression Bibbs.....60¢ @ 10¢ @ 5¢

**Coffee Mills—**

See Mills, Coffee.

**Collars, Dog—**

Nickel Chain, Walter B. Stevens &  
Son's list.....40¢  
Leather, Walter B. Stevens & Son's  
list.....40¢

**Compasses, Dividers, &c.**

Ordinary Goods.....70¢ @ 10¢ @ 75¢  
Wm. Schollhorn Co.:  
Excelsior Dividers.....60¢  
Lodi Dividers.....70¢ @ 10¢

**Conductor Pipe—**

L. C. L. to Dealers:

Galv.	Charcoal	Copper.
Steel.	Iron.	14, 16 & 20 oz.
Eastern:		
70%	50¢ @ 7½¢	45¢
Central:		
70¢ @ 5%	55¢	45¢
Western and Southern:		
65¢ @ 10%	50¢ @ 2½¢	40¢ @ 5%
So. Western:		
65¢ @ 5%	45¢ @ 5%	40¢ @ 2½¢

Terms, 60 days; 2% cash 10 days. Fac-  
tory shipments generally delivered.  
See also Eave Troughs.

**Coolers, Water—**

L. & G. Mfg. Co.:  
Gal.....2 3 4 6 8  
Galvanized, ea. \$1.85 \$2.00 \$2.25 \$2.50 \$3.00  
Galvanized, Lined, side handles,  
Gal.....2 3 4 6 8  
Each.....\$1.95 \$2.15 \$2.40 \$3.30 \$4.15  
White Enamelled.....10¢  
Agate Lined.....10¢

**Coopers' Tools—**

See Tools, Coopers'.

**Coopers' Soldering—**

Soldering Coppers, 3 lbs. to pair  
and heavier, 30¢ @ 35¢; lighter  
than 3 lb. to pair.....32¢ @ 35¢

**Cord—Sash—**

Braided, Drab.....1b. 35¢  
Braided, White, Com. Nos. 8  
to 12, 2½¢; No. 7, 2½¢; No. 6,  
2½¢. In lots of 12 doz. or  
over, 1 cent less per pound.  
Cable Laid Italian, 1b., No. 18.....37¢  
Italian, 1b., A. No. 18, 25¢; B. 25¢  
Common India.....1b., 11¢ @ 11½¢  
Cotton Sash Cord, Twisted, 18¢ @ 20¢  
Patent Russia.....1b., 10¢  
Cable Laid Russia.....1b., 21¢  
India Hemp, Br'd'd.....1b., 21¢  
India Hemp, Twisted.....1b., 13¢ @ 14¢  
Patent India, Twisted.....1b., 17¢  
Pearl Braided, cotton, No. 6, ½ lb.,  
2½¢; No. 7, 2½¢; No. 8 to 12, 2½¢  
Eddystone, Braided, Nos. 8 to 12,  
2½¢; 2, 2½¢; 6, 2½¢.  
Harmony Cable Laid Italian, Nos. 7  
to 10.....½ lb. 23¢  
Palmer  
Wire Sash Cord.....10¢  
Sash Cord Attachments, per doz. 10¢  
Samson, Nos. 8 to 12:  
Braided, ½ lb., Drab Cotton,  
55¢; Italian Hemp, 40¢ @  
50¢; Linen, 65¢; White Cot-  
ton, 50¢; Spot Cord.....50¢  
Massachusetts, White, ½ lb. 40¢  
Massachusetts, Drab.....½ lb. 45¢  
Phoenix, White, Nos. 8 to 12, 2½¢;  
Silver Lake, per lb.:  
A. Drab, 45¢; B. White, 40¢;  
C. Drab, 40¢; D. White, 35¢;  
E. Italian Hemp, 40¢; Linen.....37¢ @ 5¢  
See also Chain and Ribbon.

**Wire, Picture—**

List July 10, 1906.....90¢ @ 5¢  
Hendryx Standard Wire Picture Cord,  
Turner & Stanton Co. Wire Picture  
Cord.....85¢ @ 10¢

**Cradles—**

Grain.....40¢ @ 12½¢

**Crayons—**

White Round Crayons, Cases, 100  
gro., \$8.50 @ \$7.50 at factory, but  
lower prices made by jobbers  
Zelmer's Lumber, Indelible.....75¢ gro.  
White and Purple, old list, 85¢ @ 10¢  
Blue, Red, Green, Yellow and  
Terra Cotta, \$6.50; Black.....\$4.00  
Giant Lumber, 5¼ in. x 16-16 in.  
round, all colors, \$16.25; Indeli-  
bles.....\$18.75  
Genuine Soapstone, Metal Workers',  
5 in. x ¼ in. Round, \$2.50; 5 in. x  
¼ in. Square, \$1.75; 5 x ¼ x 3-16  
\$2.50; 6 x ¼ x 3-16.....\$3.00

**Crooks, Shepherds'—**

Fort Madison, per doz., Heavy, \$5.50;  
Light.....\$5.00

**Crow Bars—See Bars, Croc.****Cultivators—**

Victor Garden.....50¢

**Cutlery, Table—**

International Silver Company:  
No. 12 M'd'm Knives, 1847, ½ doz. \$3.50  
Star, Eagle, Rogers & Hamilton  
and Anchor.....½ doz. \$3.00  
Wm. Rogers & Son.....½ doz. \$2.50

**Cutters—Glass—**

H. H. Mayhew Co.....40¢  
Red Devil.....60¢  
R. Mfg. Co.....40¢  
Woodward.....50¢

**Meat and Food—**

American.....30¢  
Each.....\$1 \$2 \$3 \$4 \$5 \$6 \$7 \$8 \$9 \$10  
Enterprise:  
Nos. 5 10 12 22 32  
Each.....\$2 \$3 \$2.75 \$4.50 \$6 \$25 @ 25¢ @ 7½¢  
No. 202, \$1.50.....40¢ @ 7½¢  
P. S. & W. Co.:  
Dixon's.....½ doz. 33½¢  
Nos. 1 2 3  
Ideal.....\$14.00 \$17.00 \$19.00 \$30.00  
Hales.....40¢ @ 40¢ @ 5¢  
Little Giant.....½ doz. 40¢ @ 50¢  
Nos. 305 310 312 320 322  
\$35.00 \$48.00 \$44.00 \$72.00 \$68.00  
New Triumph No. 605, ½ doz., \$24.00,  
40¢ @ 10¢  
Russwin Food, No. 1, \$24.00; No. 2,  
\$27.00.....45¢ @ 10¢ @ 10¢  
Enterprise Beef Shavers.....25¢ @ 30¢

**Slaw and Kraut—**

Henry Diston & Sons:  
Slaw and Kraut Cutters.....35¢  
Corn Graters.....30¢  
J. M. Mast Mfg. Co.:  
Slaw Cutters, 1 Knife.....½ doz. \$3.00  
Combined Slaw Cutter and Corn  
Grater.....½ doz. \$1.00

**Tobacco—**

All Iron, Cheap, ½ doz. \$4.25 @ \$4.50  
Enterprise.....35¢ @ 30¢  
National, ½ doz., No. 1, \$21; No. 2,  
\$18.....40¢

**Diggers, Post Hole, &c.—**

Disston's:  
Rapid, ½ doz., \$24.00.....25¢  
Samson, ½ doz., \$34.00.....25¢  
Iwan's Improved Post Hole Auger.....40¢  
Vaughan Pattern Post Hole Augers,  
½ doz., \$7.00  
Perfection Post Hole Diggers, ½  
doz., \$8.75  
Split Handle Post Hole Diggers,  
½ doz., \$7.75  
Hercules Pattern, ½ doz., \$10.00  
Kohler's, ½ doz., Universal, \$15.00;  
Little Giant, \$12.00; Hercules,  
\$10.00; Invincible, \$9.00; Rival,  
\$8.50; Pioneer.....\$7.50  
Never-Break Post Hole Diggers,  
½ doz., \$24.00.....60¢

**Dividers—See Compasses.****Drawing Knives—**

See Knives, Drawing.

**Dressers, Emery Wheel—**

Sterling Emery Wheel Dressers.....35¢  
Sterling Wheel Dresser Cutters.....35¢

**Drills and Drill Stocks—**

Blacksmiths' Common Drilling  
Machines.....\$1.50 @ \$1.75  
Breast, Millers Falls.....15¢ lb.  
Breast, P. S. & W.....33½¢  
Goodell Automatic Drills, 50¢ @ 10¢ @ 60¢ @ 10¢  
Millers Falls Automatic Drills, 33½¢ @ 10¢  
Ratchet, Curtis & Curtis.....25¢  
Ratchet, Parker's.....40¢  
Ratchet, Weston's.....40¢  
Ratchet, Weston's, Style II Im-  
proved.....40¢  
Ratchet, No. 012.....40¢  
Ratchet, Celebrated.....40¢  
Ratchet, Whitney's, P. S. & W.  
Whitney's Hand Drill, No. 1, \$1.50;  
Adjustable, No. 10, \$12.00.....33½¢

**Twist Drills—**

Bit Stock.....60¢ @ 10¢ @ 10¢ @ 70¢  
Taper and Straight Shank.....60¢ @ 10¢ @ 60¢ @ 10¢ @ 5¢

**Drivers, Screw—**

Screw Driver Bits, per doz. 45¢ @ 50¢  
Balsey's Screw Holder and Driver, ½  
doz., 2½-in., \$4; 4-in., \$7.50; 6-in.,  
\$9.  
Buck Bros' Screw Driver Bits.....30¢  
Champion.....50¢  
Disston's.....70¢  
Fray's Hol. H'die Sets, No. 3, \$12.50  
Ford's Brace Screw Drivers.....40¢ @ 10¢  
Gay's Double Action Ratchet.....35¢  
Goodell's Auto.....55¢ @ 65¢  
Mayhew's Black Handle.....40¢  
Mayhew's Monarch.....40¢  
Millers Falls, Nos. 20 and 21.....25¢ @ 10¢  
Millers Falls, Nos. 11, 12, 41, 42, 15¢ @ 10¢  
Smith & Hemenway Co. Never-  
turn, 66%; Elmora, 60%; Star,  
30¢ @ 10¢  
Swan's:  
Nos. 7555 to 7568, 50%; No. 7540,  
40¢ @ 10¢

**Eave Trough, Galvanized—**

Territory.	L. C. L. Galvanized	Charcoal	Copper.
	Steel.	Iron.	14, 16 & 20 oz.
Eastern:			
75¢ @ 5%	60¢ @ 10%	45¢	
Central:			
75¢ @ 10%	65%	45%	
Western and Southern:			
75%	60¢ @ 5%	40¢ @ 5%	
So. Western:			
70¢ @ 10%	55¢ @ 7½%	42½%	

Terms—2% for cash. Factory ship-  
ments generally delivered.  
See also Conductor Pipe and Elbows

**Elbows and Shoes—**

Factory shipments, all territories:  
Galv. Steel and Galv. C. 1.  
Standard Gauge.....80¢  
No. 26.....50¢  
No. 24.....25¢  
No. 22.....10¢  
Copper.....80¢ @ 10%

**Elbows, Stove Pipe—**

Edwards, Standard Blue.....40¢ @ 10¢ @ 10¢  
Edwards, Royal Blue.....40¢ @ 10¢ @ 10¢  
Reeves, Dover, one piece.....40¢ @ 10¢

**Emery, Turkish—**

	4 to	5½ to	46:	220:	Flour.
Kegs.....1b. 5¢	5½¢	5½¢	5½¢	5½¢	5½¢
¼ Kegs.....1b. 5½¢	5½¢	5½¢	5½¢	5½¢	5½¢
1/8 Kegs.....1b. 5½¢	5½¢	5½¢	5½¢	5½¢	5½¢
10-lb. cans.....	7¢	7¢	7¢	7¢	7¢
10 in. cans.....	7¢	7¢	7¢	7¢	7¢
10-lb. cans, less	7¢	7¢	7¢	7¢	7¢
than 10.....	7¢	7¢	7¢	7¢	7¢
Less quantity.....	7¢	7¢	7¢	7¢	7¢

NOTE.—In lots 1 to 3 tons a discount  
of 10% is given.

**Extractors, Lemon Juice**

—See Squeezers, Lemon.

**Fasteners, Blind—**Zimmerman's ..... 50¢10¢  
Victor's Patent ..... 40¢10¢  
Upson's Patent ..... 40¢**Cord and Weight—**

Ives and Titan ..... 33½¢

**Faucets—**Cork Lined ..... 50¢10¢60¢  
Metallic Key, Leather Lined ..... 60¢10¢70¢Red Cedar ..... 40¢5¢10¢10¢5¢  
Petroleum ..... 70¢10¢10¢75¢B. & L. B. Co.:  
Star ..... 60¢10¢  
West Lock ..... 50¢10¢John Sommer's Peerless Tin Key ..... 40¢  
John Sommer's Boss Tin Key ..... 50¢John Sommer's Victor Mtl. Key ..... 50¢10¢  
John Sommer's Duplex Mtl. Key ..... 60¢John Sommer's Diamond Lock ..... 40¢  
John Sommer's I. X. L. Cork Lined ..... 50¢John Sommer's Reliable Cork Lined ..... 50¢10¢  
John Sommer's Chicago Cork Lined ..... 60¢John Sommer's O. K. Cork Lined ..... 50¢  
John Sommer's No Brand, Cedar ..... 50¢John Sommer's Perfection, Cedar ..... 40¢  
Self Measuring:  
Enterprise, ½ doz. \$36.00 ..... 40¢10¢Lane's, ½ doz. \$36.00 ..... 40¢10¢  
National Measuring, ½ doz. \$36.00 ..... 40¢10¢**Felloe Plates—**

—See Plates, Felloe.

**Files— Domestic—**

List Nov. 1, 1899.

Best Brands ..... 70¢10¢10¢75¢10¢

Standard Brands ..... 75¢10¢10¢80¢

Lower Grade ..... 75¢10¢10¢80¢10¢

**Imported—**Stubs' Tapers, Stubs' list, July  
21, '97 ..... 33 1-3¢10¢**Fixtures, Fire Door—**

Allith Underwriters' Approved ..... 50¢

Richards Mfg. Co.:  
Universal, No. 103; Special, No.  
104 ..... 33.75

Fusible Links, No. 96 ..... 50¢

Expansion Bolts, No. 107 ..... 60¢10¢

**Grindstone—**Net Prices:  
Inch ..... 15 17 19 21

Per doz. .... \$3.60 3.85 4.15 4.65

E. &amp; W. Co. .... 25¢

Reading, Hardware Co. .... 50¢

**Fodder Squeezers—**

—See Compressors.

**Forks—**NOTE.—Manufacturers are  
selling from the list of September1, 1904, but many jobbers are still  
using list of August 1, 1899, or  
selling at net prices.

Iowa Dig-Ezy Potato ..... 60¢10¢

Victor, Hay ..... 60¢15¢10¢

Victor, Header ..... 65¢

Victor, Header ..... 65¢

Champion, Hay ..... 65¢

Champion, Header ..... 65¢

Champion, Header ..... 65¢

Champion, Header ..... 65¢

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**Glasses, Level—**

Chapin-Stephens Co. .... 65¢65¢10¢

**Glue, Liquid Fish—**

Bottles or Cans, with Brush ..... 25¢10¢30¢

Elwell's ..... 40¢

**Grease, Axle—**

Common Grade ..... gro. \$6.00 @ 6.50

Dixon's Everlasting, 10-lb pails, ea.  
86¢; in boxes, ½ doz., 1 lb. \$1.20;  
2 lb. ..... \$2.00

Helmet Hard Oil ..... 25¢

**Griddles, Soapstone—**

Pike Mfg. Co. .... 33½¢33½¢10¢

**Grinders—**Royal Mfg. Co.:  
Alumund Grinding Machines, each,  
Nos. 01, \$1.75; 1A, \$2.50; 10,  
\$5.00 ..... 30¢Alumund Sickle Grinders, each,  
Nos. 20, \$5.00; 20A, \$6.00; 20B,  
Combined, \$6.50 ..... 30¢Alumund Disc Grinders, each,  
\$2.50 ..... 30¢**Grindstones—**Pike Mfg. Co.:  
Improved Family Grindstones, ½  
inch, ½ doz., \$2.00 ..... 33½¢Richards Mfg. Co., Eli and Cycle,  
Ball Bearing, mounted ..... 40¢**Grips, Nipple—**

Perfect Nipple Grips ..... 40¢10¢2¢

**Halters and Ties—**

Cow Ties ..... 40¢5¢60¢10¢

Covert Mfg. Co.:  
Web ..... 30¢2¢

Jute Rope ..... 35¢

Sisal Rope ..... 20¢

Cotton Rope ..... 45¢

Hemp Rope ..... 45¢

Oneida Community:  
Am. Coil and Halters ..... 40¢40¢5¢

Am. Cow Ties ..... 45¢50¢5¢

Niagara Coil and Halters ..... 45¢50¢5¢

Niagara Cow Ties ..... 45¢50¢5¢

**Hammers—****Handled Hammers—**

Heller's Machinists' ..... 55¢10¢55¢10¢5¢

Heller's Farriers' ..... 40¢50¢40¢10¢5¢

Peck, Store & Wilcox Co.:  
Crucible Steel ..... 50¢

Farriers' ..... 10¢10¢5¢

Riveting ..... 50¢

Machinists', revised list ..... 60¢5¢

Blacksmiths' ..... 50¢5¢

Fayette Plumb:  
A. E. Nail ..... 40¢2½¢40¢12½¢

Eng. and B. S. Hand ..... 50¢10¢50¢60¢5¢

Machinists' Hammers ..... 60¢60¢10¢

Niagara Cow Ties ..... 45¢50¢5¢

Wilkinson's Smiths' ..... 10¢9¢10¢

**Handles—**Agricultural Tool Handles  
A. E. Pick, &c. .... 60¢10¢60¢10¢5¢

Hoe, Rake, &amp;c. .... 40¢

Fork, Shovel, Spade, &c.:  
Long Handles ..... 40¢

D Handles ..... 40¢

**Cross-Cut Saw Handles—**

Atkins' ..... 40¢

Champion ..... 50¢

Disston's ..... 50¢

**Mechanics' Tool Handles—**

Auger, assorted ..... gro. \$3.00 @ \$3.50

Brad Axl. .... gro. \$1.65 @ \$1.75

Chisel Handles, Ass'd, per gro.:  
Tanged Firmer, Apple, \$2.40 @  
\$2.65; Hickory ..... \$2.15 @ \$2.40Socket Firming, Apple, \$1.75 @  
\$1.95; Hickory ..... \$1.60 @ \$1.75Socket Framing, Hickory,  
\$1.60 @ \$1.75

File, assorted ..... gro. \$1.30 @ \$1.40

Hammer, Hatchet, &c.  
60¢10¢60¢10¢5¢Hand Saw, Varnished, doz.  
80¢85¢; Not Varnished ..... 65¢75¢Plane Handles:  
Jack, doz. 30¢; Jack, Bolted, 75¢  
Fore, doz. 45¢; Fore, Bolted, 90¢  
Chapin-Stephens Co.:  
Carving Tool ..... 30¢30¢10¢

Chisel ..... 60¢60¢10¢

File and Awl ..... 60¢60¢10¢

Saw and Plane ..... 30¢30¢10¢

Screw Driver ..... 30¢30¢10¢

Millers Falls Adj. and Ratchet Auger  
Handles ..... 15¢10¢Nicholson Simplicity File Handle .....  
per gro. \$0.85 @ \$1.50W. A. Zelnicker Supply Co.:  
Hammer, ½ doz., 12 in., \$2.00;  
14 in., \$2.00; 16 in., \$2.30; 18  
in., \$2.50; 20 in., \$2.70; 22 in.,  
\$3.00; 24 in., \$3.30; 26 in., \$3.50;  
30 in., \$3.80  
Sledge, ½ doz., oval, 30 in., \$3.80;  
oval, 36 in., \$4.00; octagon,  
36 in., \$4.00  
Axe, ½ doz., 28 to 34 in., \$5.60;  
36 in., \$5.80  
Adze, ½ doz., 36 in., \$5.80; 36  
in., \$7.80  
Pick, ½ doz., R. R. 36 in.,  
\$8.00; coal, 34 in., \$5.80  
Hatchet, ½ doz., 12 to 14 in.,  
\$2.00**Hangers—**NOTE.—Barn Door Hangers are gen-  
erally quoted per pair, without track,  
and Parlor Door Hangers per double set  
with track, &c.Allith Mfg. Co.:  
Reliable, Nos. 1 and 2; Allith, No.  
3; Allith Adjustable, No. 6; Re-  
liable Parlor Door ..... 50¢**Chicago Spring Butt Co.:—**

Friction ..... 25¢

Oscillating ..... 50¢

Big Twin ..... 25¢

Chisholm & Moore Mfg. Co.:  
Baggage Car Door ..... 50¢

Elevator ..... 30¢

Railroad ..... 50¢

Cronk & Carrier Mfg. Co.:  
Loose Axle ..... 60¢2½¢

Roller Bearing ..... 70¢2½¢

Griffin Mfg. Co.:  
Solid Axle, No. 10, \$12.00, 60¢10¢Roller Bearing, No. 11, \$15.00,  
60¢10¢Roller Bearing, Ex. Hy., No.  
22, \$18.00, 60¢10¢

Bull Dog, \$24.00 ..... 70¢

Lane Bros. Co.:  
Parlor, Ball Bearing, \$4.00;  
Standard, \$3.15; No. 105, \$2.85;  
New Model, \$2.80; New Cham-  
pion ..... \$2.25

Barn Door, Standard ..... 60¢10¢

Hinged ..... net \$6.08

Covered ..... 60¢5¢

Special ..... 70¢5¢

Lawrence Bros.:  
Advance ..... 55¢10¢

Cleveland ..... 70¢7½¢

Clipper, No. 75 ..... 60¢

Crown ..... 55¢10¢

Cyclone, No. 40 ..... net \$6.50

Tandem, No. 50 ..... net \$7.50

New York ..... 55¢10¢

McKinney Mfg. Co.:  
Roller Bearing, Nos. 1 and 2, 70¢

Anti-Friction ..... 60¢

Hinged Hangers, King Charm, 60¢

Richards Mfg. Co.:  
Hangers, Nos. 41, 48, 147, 247,  
60¢5¢

Pioneer Wood Track, No. 3, \$2.25

Roller B'r'g St'l Track No. 12, \$2.20

Roller B'r'g St'l Track No. 13, \$2.50

Roller B'r'g, Nos. 39, 41, 43,  
70¢7½¢

Hero, Adj. Track No. 19, 50¢10¢

Adjustable Track Tandem Trac-  
ley Track No. 16 ..... 50¢10¢

Seal, Steel Track No. 8 ..... \$2.25

Auto Adj. Track No. 22 ..... 50¢5¢

Trolley B. D. No. 17, \$1.25; F.  
D. No. 120, \$2.25; No. 121,  
\$2.45; No. 150 ..... \$2.50Safety Underwriters F. D. No.  
101 ..... 50¢

Tandem No. 41, 2½¢ and 3 60¢10¢

Palace, Adjustable Track No.  
132 ..... 50¢5¢Royal, Adjustable Track No.  
122 ..... 50¢10¢

Ives' Wood Track No. 1 ..... \$2.25

Trolley B. D. No. 20 ..... 50¢10¢

Trolley B. D. No. 24, \$1.50; No.  
27, \$1.40; No. 28 ..... \$1.60Roller Bearings, Nos. 37, 38, 39,  
41, 43, 44, Sizes 1 and 2, 70¢7½¢Anti-friction, No. 42; No. 44,  
sizes 2½ and 3 ..... 60¢

Hinged Tandem No. 48 ..... 60¢5¢

Folding Door B. B. Swivel No.  
135 ..... 40¢Taylor & Boggs P. P. Co. Kid-  
der's Roller Bearing, 50¢15¢10¢5¢

Myers' Stayon Hangers ..... 60¢

**Hangers— Garment—**Fullman Trouser, ½ gro. 1 pair Flat  
Aluminum, \$9.00; 1 pair Round Nick-  
eled, \$9.00; 1 pair Round Nick-  
eled, \$7.00; 1 pair Flat Gun Metal, \$12.00;  
1 pair Flat Black Enameled, \$7.50;  
1 pair Wood Clamp, \$13.50; 8 Skirt  
Hangers, Folding, per gro., \$21.00;  
Coat Hangers, Folding, per gro.,  
\$20.00; 1 pair Coat Hanger Rods, Round  
Nickeled, per gro., \$10.50; Garment  
Hanger Loops, Round Nickeled,  
per gro. .... \$10.50

Victor Folding ..... ½ gro. \$9.60

**Gate—**Myers' Patent Gate Hangers, ½ doz.  
net ..... \$1.50**Joist and Timber—**

Lane Bros. Co. .... 30¢

**Hasps—**

Griffin's Security Hasp ..... 50¢10¢

McKinney's Perfect Hasp, ½ doz. 60¢

**Hatchets—**Regular list, first qual. 40¢2½¢ @  
Second quality ..... 60¢5¢**Heaters, Carriage—**Clark, No. 5, \$1.75; No. 5B, \$2.00; No.  
3, \$2.25; No. 3D, \$2.75; No. 7D, \$3.00;  
No. 3E, \$3.25; No. 1, \$3.50 ..... 25¢

Clark Coal, ½ doz., \$0.75 ..... 20¢

**Hinges—****Blind and Shutter Hinges**Surface Gravity Locking Blind:  
(Victor; National; 1868 O. P.;  
Niagara; Clark's O. P.;  
Clark's Tip; Buffalo.)  
No. .... 1 2 5  
Doz. pair ..... \$0.75 1.35 2.70Mortise Shutter:  
(L. & P. O. S., Dixie, &c.)  
No. .... 1 1½ 2 2½  
Doz. pair ..... \$0.70 .65 .60 .55Mortise Reversible Shutter (Buf-  
falo, &c.):  
No. .... 1 1½ 2  
Doz. pair ..... \$0.70 .65 .60North's Automatic Blind Fixtures,  
No. 2, for Wood, \$9.00; No. 3, for  
Brick, \$11.50 ..... 10¢

Charles Parker Co. .... 70¢75¢

Parker Wire Goods Co.:  
Hale & Benjamin Automatic Blind  
Hinges ..... 20¢**Hale's Blind Awning Hinges, No.**110, for wood, \$9.00; No. 111, for  
brick, \$9.00 ..... 20¢

Reading's Gravity ..... 60¢

Stanley's Steel Gravity Blind Hinges,  
No. 1647½, ½ doz. sets, without  
screws, \$0.95; with screws, \$1.25.Wrightsville Hardware Co.:  
O. S., Lull & Porter ..... 75¢5¢



D. & H. Scovill. 27½%  
Am. Fork & Hoe Co. (Scovill Pat-  
tern) 60%

**Handled—**

*NOTE.—Manufacturers are selling from the list of September 1, 1904, but many jobbers are still using list of August 1, 1899, or selling at net prices.*  
Cronk's Weeding, No. 1, \$2.00; No. 2, \$2.50  
Star Double Bit. 32.20  
Ft. Madison Cotton Hoe. 70&10%  
Ft. Madison Crescent Cultivator Hoe. 70&10%  
Ft. Madison Mattock Hoe: 70&10%  
Regular Weight. doz. 40&5%  
Junior Size. doz. \$1.00  
Ft. Madison Sprouting Hoe. doz. 60&10%  
Ft. Madison Dixie Tobacco Hoe. 75&10%  
Kretzinger's Cut Easy. 70&10%  
Warren Hoe. 45&10%  
W. & C. Ivanhoe. 75&10%  
B. B. 6 in. Cultivator Hoe. 33.50  
B. B. 6½ in. 33.50  
Vine Weeding. doz. net. \$1.35  
W. & C. L'tning Shuttle Hoe. doz. \$5.25

**Hoisting Apparatus—**  
See **Machines, Hoisting.****Holders—Bit—**

Angular. doz. \$24.00. 45&10%

**Door—**

Bardsley's, Iron, 10%; Brass and Bronze. 25%  
Empire. 50%  
Pullman. 30%  
Richards Mfg. Co. Nos. 119, Sure ready, 40%; No. 119, Sure Grip. 33%  
Superior. 33%

**File and Tool—**

Nicholson File Holders and File Handles. 33%&40%

**Fruit Jar—**

Triumph Fruit Jar Holder, doz. gross, \$10.80; doz. \$1.25

**Trace and Rein—**

Fernald Double Trace Holder, doz. pairs. \$1.25  
Dash Rein Holder, doz. pairs. \$1.25

**Hones—Razor—**

Pike Mfg. Co., Belgian and Swaty, 50%; German. 33%

**Hooks—Cast Iron—**

Bird Cage, Reading. 40%  
Clothes Line, Reading List. 40%  
Coat and Hat, Reading. 45&20%  
Coat and Hat, Wrightsville. 60&5%  
Harness, Reading List. 40%

**Wire—**

Belt. 80%  
Wire C. & H. Hooks. 75&10%  
Bradley Metal Clasp Wire, Coat and Hat, 70&10%; Coaling. 70&10%  
Columbian Hdw. Co., Gen. 70&5%  
Parker Wire Goods Co., King. 70&10%  
Wire Goods Co.:  
Acme, 60&10%; Chief, 70%; Crown, 75%; Czar, 65%; V. Brace, 75%;  
Czar Harness, 50&10%

**Wrought Iron—**

Box, 6 in., per doz., \$1.00; 8 in., \$1.25; 10 in., \$1.50.  
Cotton. doz. \$1.05&\$1.25  
Wrought Staples, Hooks. See Wrought Goods

**Miscellaneous—**

Hooks, Bench, see **Stops, Bench.**  
Bush, Light, doz., \$6.30; Medium, \$6.75; Heavy, \$7.65  
Grass, best, all sizes, per doz. \$3.00  
Grass, common grades, all sizes. \$1.50  
Whiffletree. lb. 5%  
Hooks and Eyes:  
Brass. 60&10%  
Malleable Iron. 70&10%  
Cronk Mfg. Co. Gate and Scuttle Hooks. 40%  
Ft. Madison Cut-Easy Corn Hooks. doz. \$3.25 net  
Turner & Stanton Co. Cup and Shoulder. 80&10%  
Bench Hooks—See **Bench Stops.**  
Corn Hooks—See **Knives, Corn.**

**Horse Nails—**

See **Nails, Horse.**

**Horseshoes—**

See **Shoes, Horse.**

**Hose, Rubber—**

Garden Hose, ¾-inch: 50%  
Competition. ft. 50¢ 6¢  
3 ply Guaranteed. ft. 80¢ 9¢  
4 ply Guaranteed. ft. 100¢ 11¢  
Cotton Garden, ¾-in., coupled: 50%  
Low Grade. ft. 80¢ 9¢  
Fair Quality. ft. 100¢ 11¢

**Irons—Sad—**

From 4 to 10. lb. \$0.34¢  
B. B. Sad Irons. lb. 3%&3½¢  
Mrs. Potts', cents per set:  
Nos. 50 55 60 65  
Jap'd Tops. 85 80 93 91  
Tin'd Tops. 88 85 98 95  
New England Pressing. lb. 3%&4¢

**Bar and Corner—**

Richards Mfg. Co., Bar, 60&10%  
Corner. 60%

**Pinking—**

Pinking Irons. doz. 60¢

**Irons, Soldering**

See **Copiers.**

**Jacks, Wagon—**

Covert Mfg. Co.:  
Auto Screw. 30&2%; Steel, 45%  
Lockport. 50%

Lane's Steel. 30&5%  
Richards Tiger Steel, No. 100. 30&10%  
Smith & Hemenway Co.'s. 25%

**Ladder—**

Richards Mfg. Co., Ladder Jacks. 50%

**Kettles—**

Brass, Spun, Plain. 20&25%  
Enameled and Cast Iron—See **Ware, Hollow.**

**Knives—**

Butcher, Kitchen, &c.—  
Foster Bros. Butcher, &c. 30%  
Wilkinson Shear & Cutlery Co. 60%

**Corn—**

Columbian Cutlery Co., Wilcut Brand Knives and Hooks. 60%  
Withington Acme. doz. \$2.65  
Dent, \$2.75; Adj. Serrated, \$2.20  
Serrated, \$2.10; Yankee No. 1, \$1.50;  
Yankee No. 2, \$1.15.

**Drawing—**

Standard List. 75&5@75&10%  
C. E. Jennings & Co., Nos. 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000

Serrated Edge, per doz. \$5.50@5.75  
Iwan's Sickle Edge. doz. \$9.50  
Iwan's Serrated. doz. \$10.00

**Miscellaneous—**

Farriers'. doz. \$3.00@3.25  
Wostenholm's. doz. \$3.00@3.25

**Knobs—**

Base, 2½-inch, Birch, or Maple, Rubber Tip. gro. \$1.25@1.40  
Carriage, Jap., all sizes. gro. 40¢@45¢

Door, Mineral. doz. 65¢@70¢  
Door, Por. Jap'd. doz. 70¢@75¢  
Door, Por. Nickel. doz. \$2.05@2.15  
Bardsley's Wood Door, Shutters, &c. 15%

**Lacing, Leather—**

See **Belt, Leather—**

**Ladders, Store, &c.—**

Allith Mfg. Co., Reliable. 50%  
Lane's Store. 25%  
Myers' Noiseless Store Ladders. 50%  
Richards Mfg. Co.:  
Improved Noiseless, No. 112. 50%  
Climax Shelf, No. 113. 60%  
Trolley, No. 109. 50%

**Ladies, Melting—**

L. & G. Mfg. Co. (low list). 20%  
P. S. & W. 40&10%  
Reading. 60%

**Lanterns—Tubular—**

Regular, No. 0. doz. \$4.35@4.50  
Side Lift, No. 0. doz. \$4.60@4.75  
Hinge Globe, No. 0. doz. \$4.60@4.75  
Other Styles. 40¢@40¢@10%

**Bull's Eye Police—**

3-inch. \$4.25@4.50

**Latches—Thumb—**

Roggin's Latches, with screw. doz. 35¢@40¢

**Door—**

Allith Mfg. Co., Reliable and Allegator, 50%; Reliable Cold Storage, 50%  
Cronk & Carrier Mfg. Co., No. 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629,





**Saws—**

Atkins' Circular	45%
Band	50@50.10
Butcher Saws	50
Cross Cuts	35
One-Man Cross Cut	40
Narrow Cross Cut	50
Hand, Hip and Panel	35.5
Miter Box and Compass	40
Mulay, Mill and Urag	45
Wood Saws	40.10
Chapin-Stephens Co.	
Turning Saws and Frames	30@30.10
Diamond Saw & Stamping Works	
Sterling Kitchen Saws	30.10@10
Disston's	
Circular, Solid and Ins'ted Tooth	50
Band, 2 to 18 in. wide	60
Hand, 1/4 to 1 1/2	60
Crosscuts	45
Narrow Crosscuts	50
Mulay, Mill and Drag	25
Framed Wood Saws	25
Wood Saw Blades	25
Wood Saw Rods, Tinned	15
Hand Saws, Nos. 12, 99, 9, 16, d100	25
D8, 120, 76, 71, 8	25
Hand Saws, Nos. 7, 107, 107 1/2, 3, 1	25
O. 00, Combination	25
Compass, Key Hole, &c.	25
Butcher Saws and Blades	30
C. E. Jennings & Co.'s	
Back Saws	16 1/2
Butcher Saws	25.75@12
Compass and Key Hole Saws	33 1/2@7 1/2
Framed Wood Saws	25.75@12
Hand Saws	12 1/2
Wood Saw Blades	33 1/2@7 1/2
Millers Falls	
Butcher Saws	15.10
Star Saw Blades	15.10
Massachusetts Saw Works	
Victor Kitchen Saws	40.10@50
Butcher Saws and Blades	35.40
Peace & Richardson's Hand Saws	30
Simonds'	
Circular Saws	45
Crescent Grooved Cross Cut Saws	30
One-Man Cross Cuts	40.10
Gang Mill, Mulay and Drag Saws	45
Band Saws	50
Back Saws	25.25@7 1/2
Butcher Saws	35.25@7 1/2
Hand Saws	25.25@7 1/2
Hand Saws, Bay State Brand	45
Compass, Key Hole, &c.	25.25@7 1/2
Wood Saws	40.75
Wheeler, Madden & Clemens Mfg.	
Co.'s Cross Cut Saws	50

**Hack Saw Blades and Frames—**

Atkins' Hack Saw Blades A & A	25%
Disston's	
Concave Blades	25
Keystone Blades	35
Hack S & Frames	30
Simonds' Mfg. Co.	35
C. E. Jennings & Co.'s	
Hack Saw Frames, Nos. 175, 180	40.75
Hack Saws, Nos. 175, 180, complete	40.75
Goodell's Hack Saw Blades	40.75
Griffin's Hack Saw Blades	35.65@10
Star Hack Saws and Blades	15.10
Sterling Hack Saw Blades	30.10@50
Sterling Hack Saw Frames	30.10@10
Sterling Power Hack Saw Machines	each, No. 1, \$25.00; No. 2, \$30.00; 10%
Victor Hack Saw Blades	20
Victor Hack Saw Frames	40

**Scroll—**

Barnes, No. 7, 115	25
Barnes' Scroll Saw Blades	40
Barnes' Velocipede Power Scroll Saw	without boring attachment, \$18; with boring attachment, \$20
Lester, complete	\$10.00
Rogers, complete	\$3.50 and \$4.00

**Scales—**

Family, Turnbull's	50@50.10
Counter	
Hatch, Platform, 1/2 oz. to 4 lbs.	doz. \$5.50
Two Platforms, 1/2 oz. to 8 lbs.	doz. \$16.00
Union Platform, Plain	\$1.70@1.90
Union Platform, Stpd.	\$1.85@2.15
Chattillon's	
Eureka	25
Favorite	40
Crocers' Trip Scales	50
The Standard Portables	40
The Standard R. R. and Wag.	50.10

**Scrapers—**

Boaz, 1 Handle	doz. \$2.00@2.25
Boaz, 2 Handle	doz. \$2.50@2.80
Ship, Light	\$2.00; Heavy, \$1.50
Chapin-Stephens Co., Box	30@30.10
Richards Mfg. Co., Foot	60

**Screws—Bench and Hand**

Bench, Iron, doz., 1 in.	\$2.50@2.75
2.75; 1 1/4, \$3.00@3.25; 1 1/2, \$3.50@3.75	
Bench, Wood	20@20.10
Hand, Wood	70.10@70.10
Chapin-Stephens Co., Hand	70@70.10

Coach, Lag and Hand Rail	
Lag, Cone Point	75.10@10
Coach, Gimlet Point	75.10@10
Hand Rail	70.10@75

**Jack Screws—**

Standard List	70.10@75
Millers Falls	50.10@10
Swett Iron Works	70@75

**Machine—**

Cut Thread, Iron, Brass or Bronze	
Flat Head or Round Head	50@50.10
Fullister Head	40@10.10
Roll Thread, F. H. or R. H.	75.10
Iron	75.10
F. H. or R. H., Brass, No. 8 to 14	65.10

**Set and Cap—**

Set (Iron)	75.10@75.10
Set (Steel), net advance over Iron	25
8 1/2 in. Hd. Cap	70.10@75.10
10 1/2 in. Hd. Cap	70.10@75.10
Rd. Hd. Cap	50.75
Fullister Hd. Cap	60.75

**Wood—**

List July 23, 1903.

Flat Head, Iron	87.5@45
Round Head, Iron	85.5@45
Flat Head, Brass	80.5@45
Round Head, Brass	77.5@45
Flat Head, Bronze	75.5@45
Round Head, Bronze	72.5@45
Drive Screws	87.5@45

**Scroll Saws—**

See Saws, Scroll.

**Scythes—**

Per doz.

Grass, No. 1, Plain	\$6.25@6.75
Clipper, Bronzed Webb	\$6.50@7.00
No. 3 Clipper, Pol'd Webb	\$6.75@7.25
No. 6 Clipper and Solid Steel	\$7.00@7.50
Bush, Weed and Bramble, No. 2	\$6.50@7.00
Grain, No. 1	\$8.25@8.75
Bronzed Webb, No. 1	\$8.50@9.00
Nos. 3 and 4 Clipper, Grain	\$8.75@9.25
Solid Steel, No. 6	\$9.25@9.75

**Seeders, Raisin—**

Enterprise	25@30
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**Sets— Awl and Tool—**

Fray's Adj. Tool Handles, Nos. 1, \$12; 2, \$18; 3, \$12; 4, \$9; 5, \$7	50%
Millers Falls Adj. Tool Handles, No. 1, \$12; No. 4, \$12; No. 5, \$18; 20.10	

**Garden Tool Sets—**

Ft. Madison Three Plows, Hoe, Rake and Shovel	\$9.00
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**Sets, Nail—**

Octagon	gro. \$3.50@3.75
Buck Bros	27 1/2
Cannon's Diamond Point	\$12
Mayhew's	\$9.00
Snell's Corrugated, Cup Pt.	40.10
Snell's Knurled, Cup Pt.	40.10
Victor Knurled Cup Pt.	\$7.50

**Rivet—**

Regular list	75@75.10
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**Saw—**

Atkins'	
Criterion	40%
Adjustable	40%
Disston's Star, Monarch and Tri-umph	30%
Morrill's No. 1	\$15.00
Nos. 3 and 4, Cross Cut	\$20.00
No. 5, Mill	\$30.00
Nos. 10, 11, 95	\$15.00
No. 1 Old Style	\$10.00
Special	\$16.25
Giant Royal Cross Cut	\$1 doz. \$9.00
Royal, Hand	\$1 doz. \$4.50
Taintor Positive	\$1 doz. \$4.75

**Shaving—**

Fox Shaving Sets, No. 30	\$1 doz. net, \$24.00
Smith & Hemenway Co.'s	75%

**Sharpeners, Knife—**

Pike Mfg. Co.	
Fast Cut Pocket Knife Hones	\$1.50
Mounted Kitchen Sand Stone	\$1.50
Natural Grit Carving Knife Hones	\$3.00
Quick Cut Emery Carving Knife Hones	\$1.50
Quick Edge Pocket Knife Hones	\$2.50

**Skate—**

Smith & Hemenway Co., Eureka	50%
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**Shaves, Spoke—**

Iron	doz. \$1.10@1.25
Wood	doz. \$1.75@2.25
Bailey's (Stanley R. & L. Co.)	45
Chapin-Stephens Co.	30@30.10
Goodell's	\$9.00

**Shears—**

Cast Iron	7 8 9 in.
Best	\$16.00 15.00 20.00 gro.
Good	\$13.00 15.00 17.00 gro.
Cheap	\$5.00 6.00 7.00 gro.
Straight Trimmers, &c.	
Best quality, Nickel	70@70.10
Tadior's	60@60.10
Acme Cast Shears	40@40.10
Heinrich's Tailor's Shears	40@40.10
Wilkinson Shear & Cutlery Co.	
Sheep, 1900 list	30.10@5
Grass	50.10
Horse or Mule	50.10

**Tinners' Snips—**

Steel Blades	20.5@20.10
Steel Laid Blades	40.10@50
Forged Handles, Steel Blades, Berlin	
Heinrich's Snips	40
Jennings & Griffin Mfg. Co.'s	40
10 in.	33.5@7 1/2
Niagara Snips	40
P. S. & W. Forged Handles	25
W. R. W.	40.10

**Pruning Shears—**

Cronk's Hand Shears	33 1/2
Cronk's Wood Handle Shears	33 1/2
Disston's Combined Pruning Hook and Saw	\$18.00
Disston's Pruning Hook only	\$12.00
John T. Henry Mfg. Co.	
Pruning Shears, all grades	40
P. S. & W. Co.	40.10
Columbian Cutlery Co.	
Hedge, Wilcut Brand	60.10
Lawn and Border, Wilcut Brand	60.10

**Sheaves—Sliding Door—**

Reading	40%
R. & E. list	15%

**Sliding Shutter—**

Reading list	40%
R. & E. list	10%

**Shells—Shells, Empty—**

Brass Shells, Empty	
Climax, 10 and 12 gauge	65.10
Club, Rival, 65.5; First Quality	60.5
Paper Shells, Empty	
New Rapid, 10, 12, 16 and 20 gauge	25.10
Climax, 10 and 12 gauge; Acme, 10, 12, 16 and 20 gauge; Leader grade	25.5
Union, League, 12 and 12 gauge	25
Rival Grade	25
New Climax, Deafance, 10, 12, 14, 16 and 20 gauge; Climax, 14, 16 and 20 gauge	20.5
Challenge, Monarch, 10, 12, 16 and 20 gauge; League, Union, 14, 16 and 20 gauge; Repeater Grade	20
Expert, 10, 12, 16 and 20 gauge	33.5

**Shells, Loaded—**

Loaded with Black Powder	40%
Loaded with Smokeless Powder, medium grade	40.5
Loaded with Smokeless Powder, high grade	40.10@10
Union Metallic Cartridge Co.	
New Club, Black Powders	40%
Nitro Club, Smokeless Powders	40.5
Arrow, Smokeless Powders	40.10@10
Winchester	
Smokeless Repeater Grade	40.5
Smokeless Leader Grade	40.10@10
Black Powder	40%

**Shingles, Metal—Per Sq.**

Edwards Mfg. Co.	
Painted	
14 x 20	\$1.25
10 x 14	4.50
7 x 10	4.75
Wheeling Corrugating Co.	
Dixie, 14 x 14 in.	\$4.25
Dixie, 10 x 14 in.	4.50
Dixie, 7 x 10 in.	5.00

**Shoes, Horse, Mule, &c.—**

F.o.b. Pittsburgh:	
Iron	per keg \$4.10
Steel	per keg \$3.85
Burden's, all sizes	per keg \$3.90

**Shot—**

25-lb. bag	
Drop, up to P.	\$1.95
Drop, B and larger	2.20
Ruck	2.20
Chilled	2.20
Dust	2.40

**Shovels and Spades—**

Association List, Nov. 15, 1908	40%
Avery Stamping Co.	40%

**Snow Shovels—**

Long Handle	\$3.25@3.50
Wood and Mall, D. Handle	\$3.75@4.00

**Sieves and Sifters—**

Hunter's Imitation	gro. \$9.50@10.00
Hunter's Genuine	per gro. \$12.00@12.50

**Sifters, Ash—**

Acme Ball Bearing Sales Co., Acme Automatic Ash Sifter, each	\$3.25
per doz.	\$39.00

**Sieves, Seamless Metallic**

Mesh	14 16 18 20
Iron Wire	\$1.05 1.05 1.10 1.20
Tinned Wire	\$1.15 1.15 1.20 1.30

**Sieves, Wooden Rim—**

Nested, 10, 11 and 12 Inch	
Mesh 18, Nested	doz. \$0.90@0.95
Mesh 20, Nested	doz. \$1.00@1.05
Mesh 24, Nested	doz. \$1.30@1.40

**Sinks, Cast Iron**

Painted, Standard list:	
12 x 12 to 22 x 36 in.	60%
20 x 40 to 24 x 50 in.	50%
24 x 60 to 24 x 120 in.	30%
Barnes' low list:	
Up to and including 20 x 36 in.	50%
20 x 40 to 24 x 50 in.	45%

NOTE.—There is not entire uniformity in lists used by jobbers.

**Skins, Wagon—**

Cast Iron	70@75.10
Steel	40@45

**Slates, School—**

Factory Shipments	
"D" Slates	50.50@10
Eureka, Unexcelled Noiseless	60.50@10
Victor A, Noiseless	60.50@10

**Slaw Cutters—See Cutters.****Snaps, Harness—**

German	40@40.10
Covert Mfg. Co.	
Derby, 25; Yankee, 30.2; Yankee Roller, 30.2	
High Grade, 40; Trojan	40
Jockey	25

**Snaths—**

Scythe	55@60%
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**Snips, Tanners—See Shears.****Spoons and Forks—****Silver Plated—**

Good Quality	50.10@60.5
Cheap	60@60.10
International Silver Co.	
1897 Rogers Bros.	40.10
Rogers & Hamilton	50.10
Rogers & Bro., William Rogers	50.10
Eagle Brand	50.10
Anchor, Rogers Brand	60
Wm. Rogers & Son	60.10

**Miscellaneous**

German Silver	60@60.5
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**Tinned Iron—**

Teas	per gro. 50@55
Tables	per gro. \$0.90@1.00

**Springs—Door—**

Bardley's Spring and Check	40%
Chicago Coil	40.10
Gem (Coil)	20
Pullman (Coil)	35
Reliance (Coil)	40.10
Star (Coil)	40
Torrey's Rod, 30 in.	\$1.10

**Carriage, Wagon, &c.—**

1 1/2 in. and Wider:	Per 100 lb.
Black	\$4.75@5.00
Half Bright	\$4

## Scythe Stones—

Like Mfg. Co., 1901 list:		
Black Diamond S. 8. 5. 5. gro.	\$12.00	
Lamotte S. 8. 5. 5. gro.	\$11.00	
White Mountain S. 8. 5. 5. gro.	\$9.00	
Green Mountain S. 8. 5. 5. gro.	\$6.00	
Extra Indian Pond S. 8. 5. 5. gro.	\$7.50	
No. 1 Indian Pond S. 8. 5. 5. gro.	\$7.50	
No. 2 Indian Pond S. 8. 5. 5. gro.	\$4.50	
Leader Red End S. 8. 5. 5. gro.	\$4.50	
Quick Cut Emery. 2. 2. 2. gro.	\$10.00	
Pure Corundum. 2. 2. 2. gro.	\$15.00	
Emerald Scythe Rifles. 2. 2. 2. gro.	\$7.00	
Emerald Scythe Rifles. 3. 3. 3. gro.	\$10.00	
Balance of 1904 list 33 1/2%		
Electro (Artificial). 2. 2. 2. gro.	\$12.00	
Lightning (Artificial). 2. 2. 2. gro.	\$18.00	

## Stoppers, Bottle—

Victor Bottle Stoppers. 2. 2. 2. gro.	\$9.00	
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## Stops—Bench—

Millers Falls. 2. 2. 2. gro.	\$15.10	
Morrill's. No. 1. 2. 2. 2. gro.	\$10.00	
Morrill's. No. 2. 2. 2. 2. gro.	\$12.50	

## Door—

Chapin-Stephens Co. 2. 2. 2. gro.	\$50.00	
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## Plane—

Chapin-Stephens Co. 2. 2. 2. gro.	\$20.00	
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## Straps—Box—

Cary's Universal, case lots. 2. 2. 2. gro.	\$20.00	
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## Stretchers, Carpet—

Cast Iron, Steel Points, doz.	\$60.00	
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Socket. 2. 2. 2. gro.	\$1.66	
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Excelsior Stretcher and Tack Hammer Combined. 2. 2. 2. gro.	\$6.00	
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## Stuffers, Sausage—

Enterprise Mfg. Co. 2. 2. 2. gro.	\$25.00	
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National Specialty Co., list Jan. 1, 1902	\$20.00	
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P. S. & W. Co. 2. 2. 2. gro.	\$40.00	
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## Sweepers, Carpet—

Bissell Carpet Sweeper Co. 2. 2. 2. gro.	\$36.00	
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Superba, Crotch Mahogany. 2. 2. 2. gro.	\$36.00	
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Triumph, Fancy Veneers. 2. 2. 2. gro.	\$33.00	
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Parlor Queen, Fig. Rosewood. 2. 2. 2. gro.	\$30.00	
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Elite, Hungarian Ash. 2. 2. 2. gro.	\$29.00	
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Am. Queen, Fig. Mahogany. 2. 2. 2. gro.	\$27.00	
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Ideal, Bird's-Eye Maple. 2. 2. 2. gro.	\$25.00	
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Grand Rapids, Nickel. 2. 2. 2. gro.	\$21.00	
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Japan. 2. 2. 2. gro.	\$22.00	
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Standard, Nickel. 2. 2. 2. gro.	\$20.00	
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Crown Jewel, Nickel. 2. 2. 2. gro.	\$21.00	
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Crystal, Glass Top. 2. 2. 2. gro.	\$36.00	
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Grand, 17 in. wide. 2. 2. 2. gro.	\$36.00	
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Club, 24 in. wide. 2. 2. 2. gro.	\$54.00	
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Hall, 28 in. wide. 2. 2. 2. gro.	\$60.00	
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NOTE.—Rebates: 50¢ per dozen on three dozen lots; \$1 per dozen on five dozen lots; \$2 per dozen on ten dozen lots; \$2.50 per dozen on twenty-five dozen lots.		
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## Tacks, Finishing Nails, &amp;c.

American Carpet Tacks. 2. 2. 2. gro.	\$90.00	
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American Cut Tacks. 2. 2. 2. gro.	\$90.00	
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Suedes' Cut Tacks. 2. 2. 2. gro.	\$90.00	
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Suedes' Upholsterers'. 2. 2. 2. gro.	\$90.00	
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Gimp Tacks. 2. 2. 2. gro.	\$90.00	
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Lace Tacks. 2. 2. 2. gro.	\$90.00	
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Trimmers' Tacks. 2. 2. 2. gro.	\$90.00	
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Looking Glass Tacks. 2. 2. 2. gro.	\$65.00	
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Bill Posters' and Railroad Tacks. 2. 2. 2. gro.	\$90.00	
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Hungarian Nails. 2. 2. 2. gro.	\$80.00	
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Finishing Nails. 2. 2. 2. gro.	\$70.00	
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Trunk and Clout Nails. 2. 2. 2. gro.	\$80.00	
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NOTE.—The above prices are for straight weights.		
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## Miscellaneous—

Double Pointed Tacks. 2. 2. 2. gro.	\$90.00	
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See also Nails, Wire.		
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## Tanks, Oil and Gasoline—

Wilson & Friend Co. 2. 2. 2. gro.	\$30.00	
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Gal. Gasoline. 2. 2. 2. gro.	\$2.75	
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Oil. 2. 2. 2. gro.	\$3.00	
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Gal. Gasoline. 2. 2. 2. gro.	\$2.75	
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Oil. 2. 2. 2. gro.	\$3.00	
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## Tapes, Measuring—

American Asses' Skin. 2. 2. 2. gro.	\$50.00	
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Patent Leather. 2. 2. 2. gro.	\$25.00	
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Steel. 2. 2. 2. gro.	\$3.00	
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Chesterman's. 2. 2. 2. gro.	\$25.00	
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Kouffelt & Esser Co. 2. 2. 2. gro.	\$40.00	
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Favorite, Ass. Skin. 2. 2. 2. gro.	\$40.00	
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Favorite, Duck and Leather. 2. 2. 2. gro.	\$25.00	
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Metallic and Steel, lower list. 2. 2. 2. gro.	\$35.00	
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Pocket. 2. 2. 2. gro.	\$35.00	
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Lufkin's. 2. 2. 2. gro.	\$40.00	
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Asses' Skin. 2. 2. 2. gro.	\$40.00	
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Metallic. 2. 2. 2. gro.	\$30.00	
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Patent Bend, Leather. 2. 2. 2. gro.	\$25.00	
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Pocket. 2. 2. 2. gro.	\$40.00	
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Steel. 2. 2. 2. gro.	\$35.00	
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Wiebusch & Hilger. 2. 2. 2. gro.	\$35.00	
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Chesterman's Metallic, No. 34L. 2. 2. 2. gro.	\$25.00	
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Chesterman's Steel, No. 1038L. 2. 2. 2. gro.	\$25.00	
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## Teeth, Harrow—

Steel Harrow Teeth, plain or headed, 1/4-inch and larger. 2. 2. 2. gro.	\$2.75	
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per 100 lbs. \$2.75 @ \$3.00		
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## Thermometers—

Tin Case, Cabinet, Flange, Dairy, &c. 2. 2. 2. gro.	\$30.00	
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## Ties, Bale—Steel Wire—

Single Loop. 2. 2. 2. gro.	\$80.00	
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Monitor, Cross Head, &c. 2. 2. 2. gro.	\$60.00	
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## Tinnners' Shears, &amp;c.—

See Shears, Tinnners', &c.		
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## Tinware—

Stamped, Japanned and Pieced, sold very generally at net prices.		
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## Tire Benders, Upsetters, &amp;c.

See Benders and Upsetters, Tire.		
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## Tools—Coopers'—

L. & I. J. White. 2. 2. 2. gro.	\$20.00	
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## Haying—

Myers' Hay Tools. 2. 2. 2. gro.	\$45.00	
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## Miniature—

Smith & Hemenway Co.'s, Davidson, 2. 2. 2. gro.	\$15.00	
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Gold Plated. 2. 2. 2. gro.	\$2.00	
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## Saw—

Atkins' Cross Cut Saw Tools. 2. 2. 2. gro.	\$35.00	
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Simonds' Improved. 2. 2. 2. gro.	\$35.00	
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Simonds' Crescent. 2. 2. 2. gro.	\$20.00	
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## Ship—

L. & I. J. White. 2. 2. 2. gro.	\$20.00	
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## Transom Lifters—

See Lifters, Transom.		
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## Traps—Fly—

Balloon, Globe or Acme, doz.	\$1.15 @ \$1.25	
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Harper, Champion or Paragon, doz.	\$1.25 @ \$1.40	
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doz. \$1.25 @ \$1.40; gro. \$13.00 @ \$13.50		
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## Game—

Imitation Onocida. 2. 2. 2. gro.	\$75.00	
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Newhouse. 2. 2. 2. gro.	\$45.00	
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Hawley & Norton. 2. 2. 2. gro.	\$65.00	
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Victor. 2. 2. 2. gro.	\$75.00	
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Onocida Community Jump. 2. 2. 2. gro.	\$50.00	
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Hector. 2. 2. 2. gro.	\$75.00	
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## Mouse and Rat—

Mouse, Wood, Choker, doz. holes	\$12.00	
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Mouse, Round or Square Wire. doz. 85¢ @ 90¢		
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Marty French Rat and Mouse Traps (Genuine). 2. 2. 2. gro.	\$13.25	
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No. 1, Rat, 2. 2. 2. gro.	\$5.75	
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No. 3, Rat, 2. 2. 2. gro.	\$5.75	
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No. 3 1/2, Rat, 2. 2. 2. gro.	\$5.75	
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No. 4, Mouse, 2. 2. 2. gro.	\$3.85	
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No. 5, Mouse, 2. 2. 2. gro.	\$3.00	
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Onocida Community. 2. 2. 2. gro.	\$3.00	
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Out o' Sight, Mouse, 2. 2. 2. gro.	\$3.00	
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Out o' Sight, Rat, 2. 2. 2. gro.	\$1.25	
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Easy Set, Mouse, 2. 2. 2. gro.	\$1.00	
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Easy Set, Rat, 2. 2. 2. gro.	\$1.00	
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Wood Choker, Rat, 2. 2. 2. gro.	\$1.12	
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Premier Tin Choker, 5 hole, 2. 2. 2. gro.	\$1.75	
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## Trowels—

Disston Brick and Pointing. 2. 2. 2. gro.	\$25.00	
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Disston Plastering. 2. 2. 2. gro.	\$20.00	
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Disston "Standard Brand" and Gard. 2. 2. 2. gro.	\$30.00	
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Kohler's Steel Garden Trowels, 2. 2. 2. gro.	\$5.00	
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5 in. \$4.50; 6 in. \$5.00.		
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Never-Break Steel Garden Trowels. 2. 2. 2. gro.	\$6.00	
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Woodrough & McFarlin, Plastering. 2. 2. 2. gro.	\$25.00	
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## Trucks, Warehouse, &amp;c.—

B. & L. Block Co. 2. 2. 2. gro.	\$50.00	
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New York Pattern. 2. 2. 2. gro.	\$60.00	
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Western Pattern. 2. 2. 2. gro.	\$18.00	
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Handy Trucks. 2. 2. 2. gro.	\$15.00	
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Grocery. 2. 2. 2. gro.	\$15.00	
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McKinney Trucks. 2. 2. 2. gro.	\$15.00	
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Model Stove Trucks. 2. 2. 2. gro.	\$18.50	
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## Tubs, Wash—

M'f'r's list, price per gross. No. 0 1 2 3		
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Galvanized. \$67 \$79 \$89 \$99 10%		
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## Twine, Miscellaneous—

Flax Twine: 2. 2. 2. gro.	\$25.00	
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No. 9, 1/4 and 1/2-lb. Balls. 2. 2. 2. gro.	\$21.00	
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No. 12, 1/4 and 1/2-lb. Balls. 2. 2. 2. gro.	\$21.00	
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No. 18, 1/4 and 1/2-lb. Balls. 2. 2. 2. gro.	\$18.00	
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No. 24, 1/4 and 1/2-lb. Balls. 2. 2. 2. gro.	\$17.00	
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No. 36, 1/4 and 1/2-lb. Balls. 2. 2. 2. gro.	\$17.00	
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Chalk Line, Cotton. 2. 2. 2. gro.	\$1.00	
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Balls. 2. 2. 2. gro.	\$26.00	
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Cotton Mops, 6, 9, 12 and 15 lb. to doz. 2. 2. 2. gro.	\$11.00	
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Cotton Wrapping, 5 Balls to lb. according to quality. 2. 2. 2. gro.	\$15.00	
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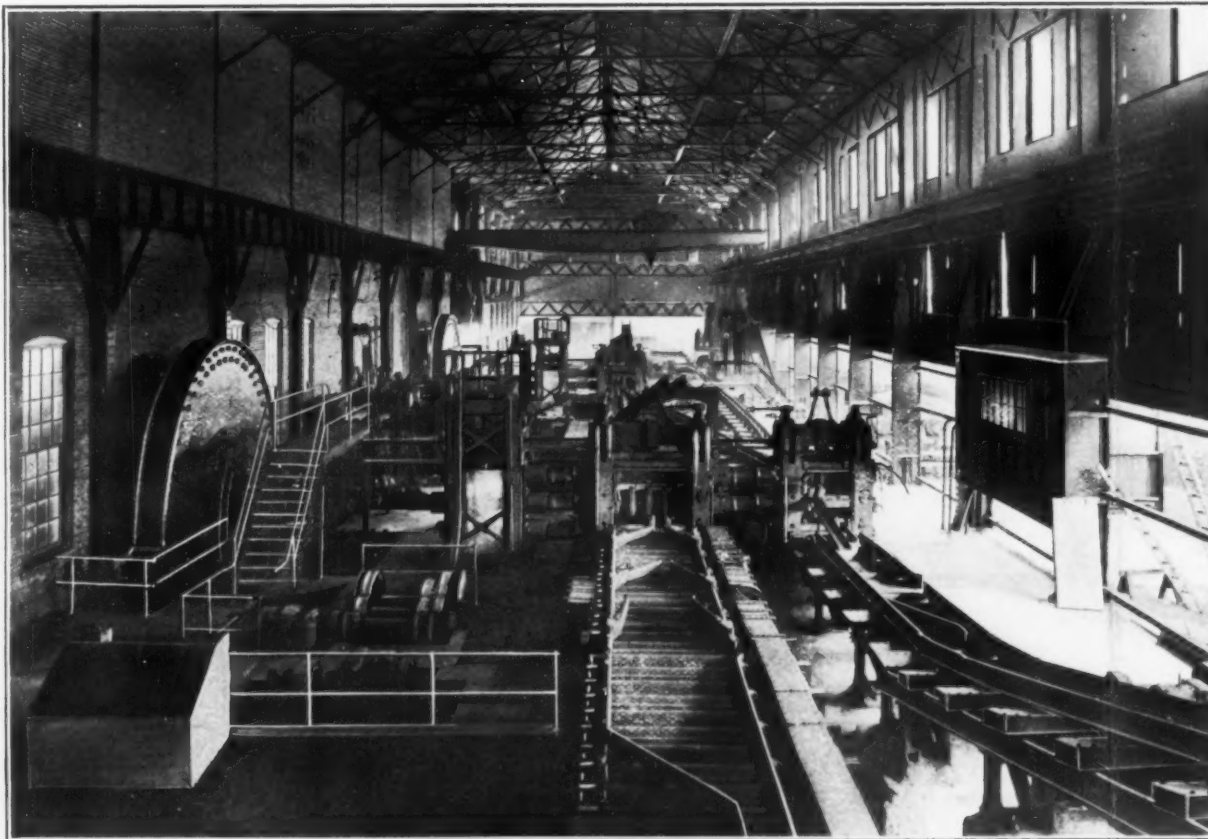
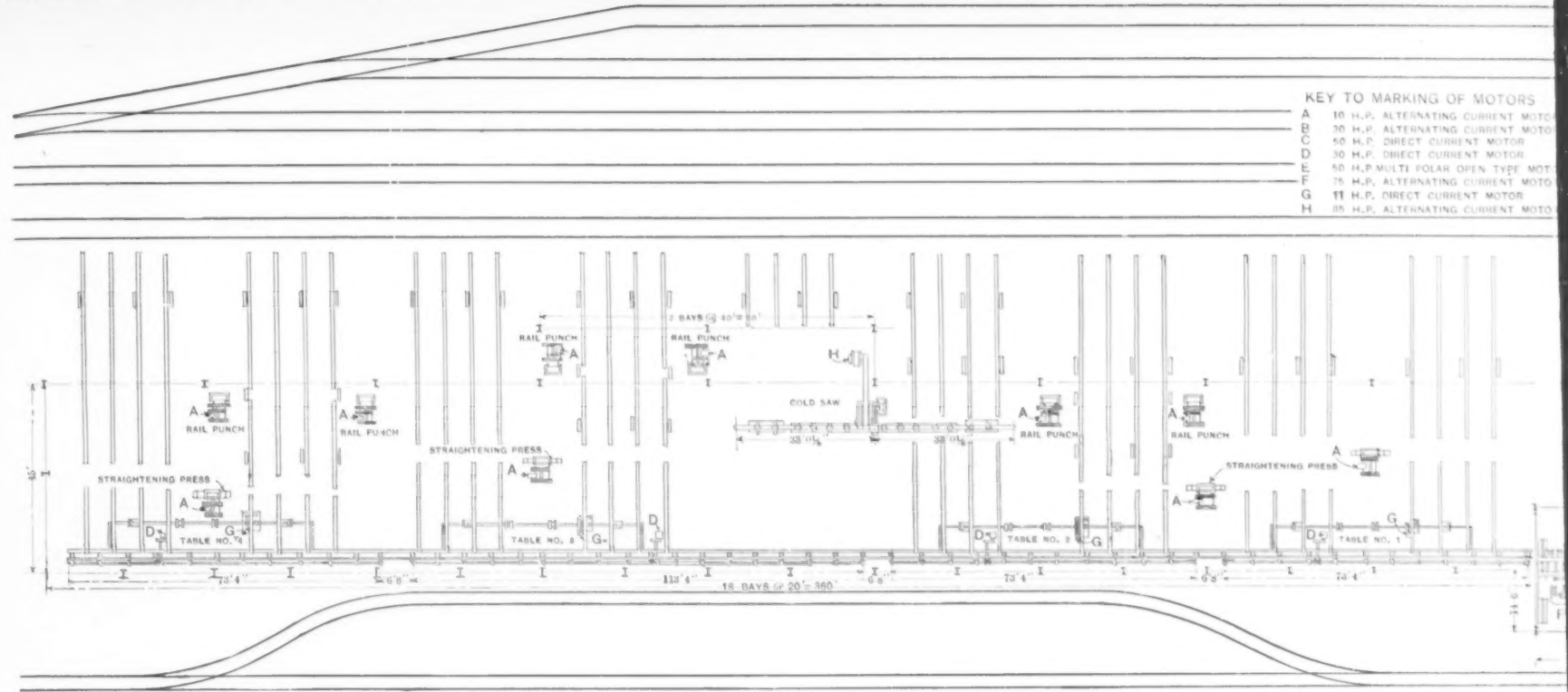


Fig. 2. View of the Rerolling Rail Mill Looking North from in Front of the Roughing and Finishing Rolls.

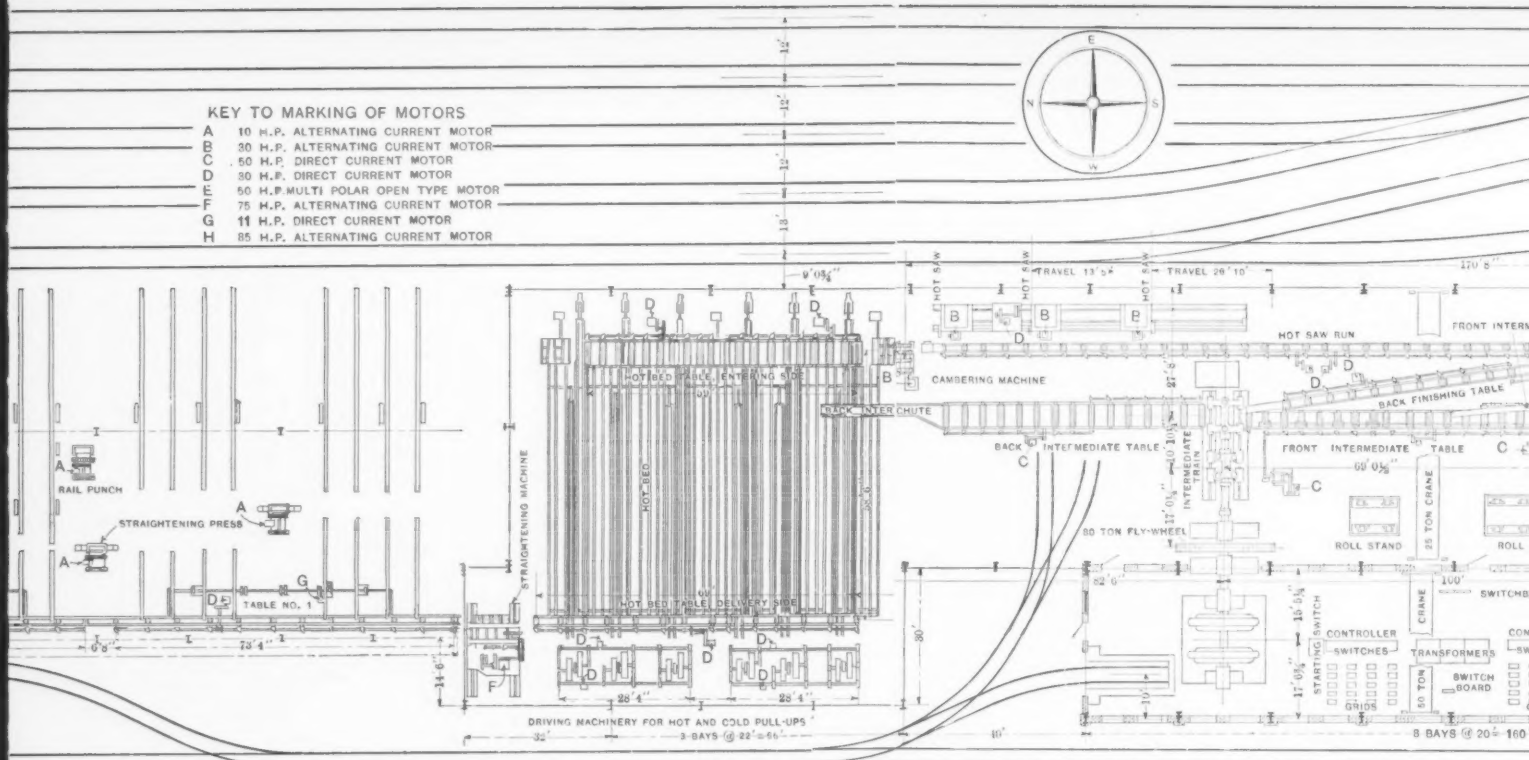


Fig. 1. General Plan of the New No. 2 Rail Mill of the Illinois Steel Company.

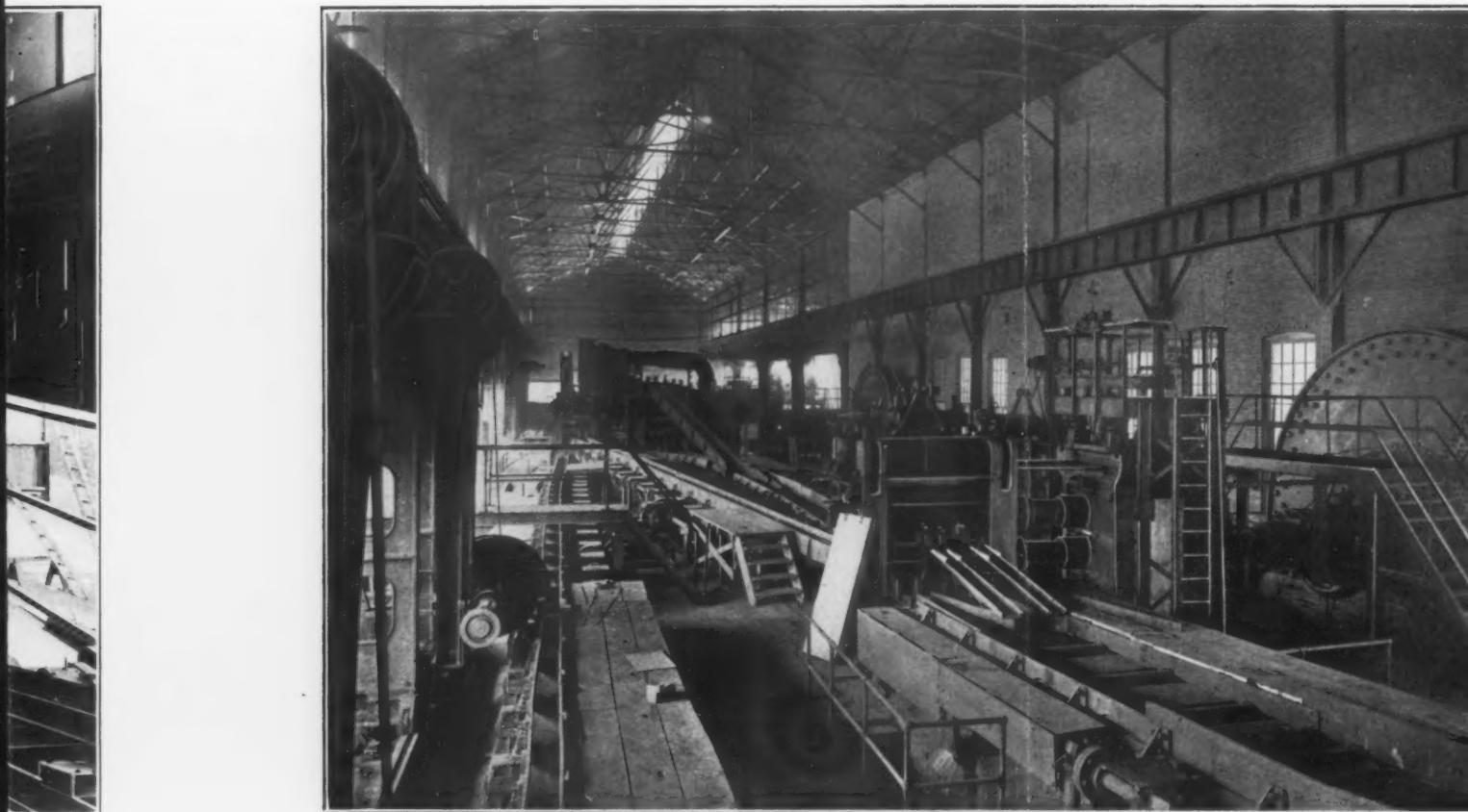


Fig. 3. View of the Mill Looking South from in Rear of the Intermediate Rolls.

THE ILLINOIS STEEL COMPANY'S NEW RA



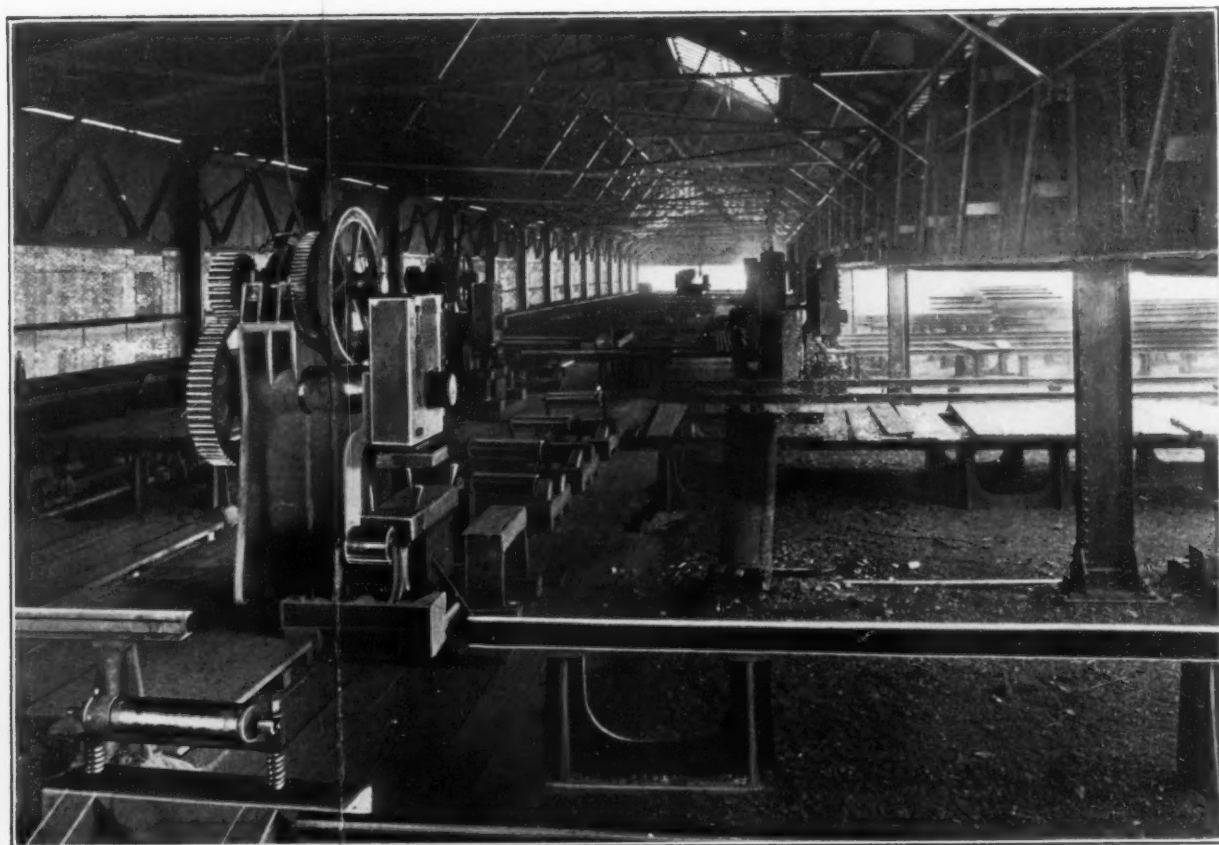
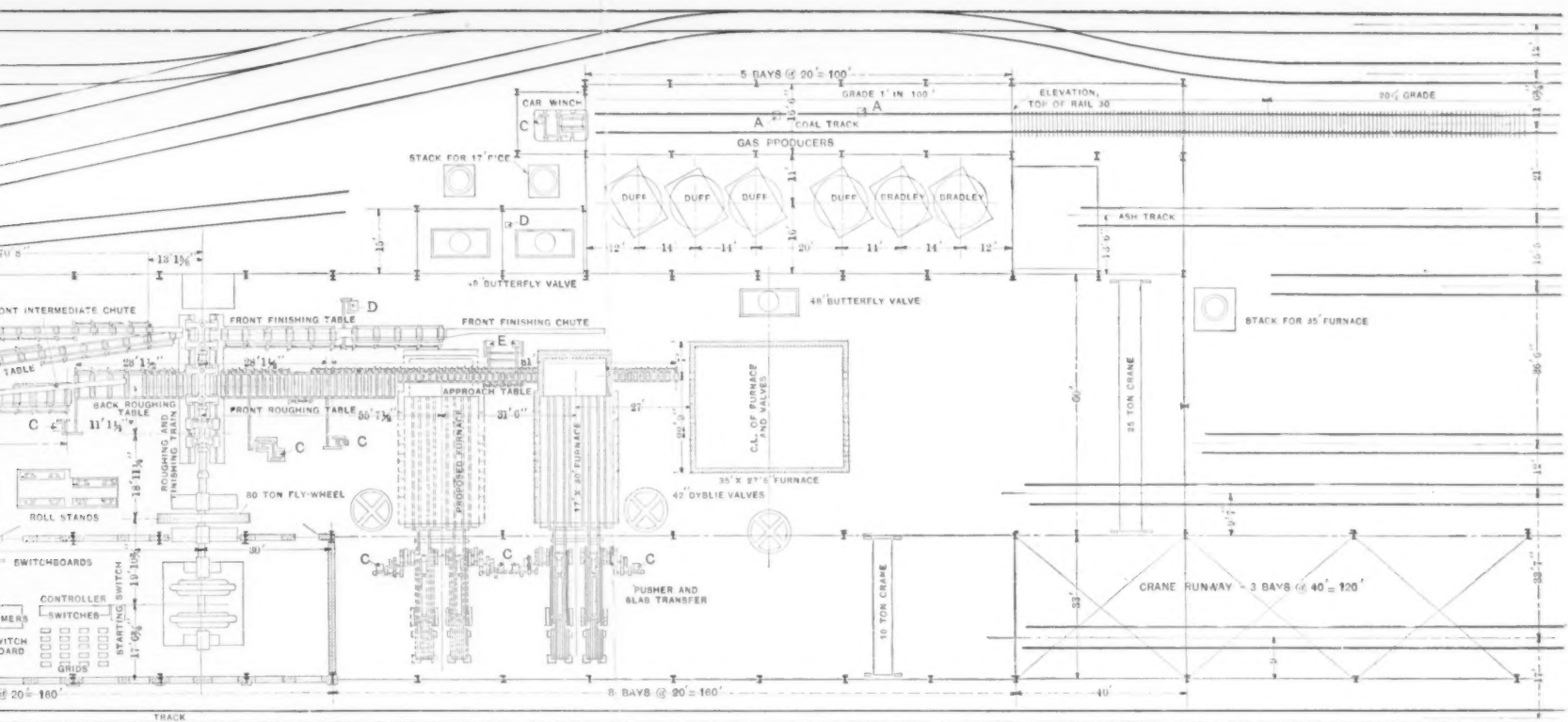


Fig. 4. View of the Finishing End of the Mill.

RAIL MILL.